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PROJECT OPERATIONS BRANCH, CODE 513 GREENBELT, MARYLAND, U.S.A. 20771 GODDARD SPACE FLIGHT CENTER

SATELLITE SITUATION REPORT

VOLUME 30, NUMBER 4 DECEMB

DECEMBER 31, 1990

(NASA-TM-103400) SATELLITE SITUATION REPORT, VOLUME 30, NO. 4 (NASA) 241 p CSCL 22B

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SATELLITE SITUATION REPORT VOLUME 30 NO. 4 A/O 24602 ON DECEMBER 31. 1990

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PROJECT OPERATIONS BRANCH CODE 513 NASA/GODDARD SPACE FLIGHT CENTER GREENBELT, MARYLAND, U.S.A. 20771

	OBJECT	OBJECTS IN ORBIT	911	DECAYE	DECAYED OBJECTS	TS
	PAYLOAD	DEBRIS	4	PAYLOAD DEBRIS	DEBRIS	TOTAL
ARGENTINA	-	٥		0	٥	•
AUSTRALIA	4	0	4		٥	
BRAZIL	m	0	٣	0	٥	•
CANADA	†1	o	14	0	9	٥
CZECH	0	0	0	-	٥	_
ESA	19	160	179	m	401	404
ESRO	۰	•	•	7	10	01
FRANCE	15	20	35	•	96	61
FRANCE/FRG	7	0	~	0	0	٥
20.00	1,0		11	*	to	0.
IND I A	60	0	60	*	^	
INDONESIA	NO.	0	ĸ	-	-	N
⋖						
MUNICATIONS SATELLITE						
ORGANIZATION (ITSO)	39	0	39		٥	-
ISRAEL	0	٥	0	N	7	4
ITALY	-	0	-	60	٥	S)
JAPAN	4 7	89.7	92	7	59	99
LUXEMBOURG	~	•		•	٥	•
MEXICO	74	•	4	0	٥	0
NATO	•	٥	v	٥	٥	•
NETHERL ANDS	٥	٥	٥	-	m	•
PAKISTAN	٥	0	0		٥	-
PRC	11	10	8	19	53	74
SAUDI ARABIA	~	0	~	0	0	0
SPAIN	-	٥	-	0	0	0
SWEDEN	N,	•	7	0	٥	0
ž	16	N	18	10 0	m	1 1
NS	575	2490	3065	601	2603	3204
USSR	1179	2026	3205	1481	8925	10406
COLUMN	1960	4828	6788	2154	12121	14275

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12121			760	OBJECTS IN OR	08817				
NATIONAL									
DESIGNATION	ON NAME	NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE KM.	TRANSHITTING FREG.(MHZ)
1958 LAUNCHES	CHES								
B+ T ▲ 1									
	- COVEN	9. '	s :	17 MAR	137.8	34.3	4268	652	
	1	C ;	s :		133.3	34.3	3880	652	
		9/61	8		127.7	34.2	3403	639	
1959 LAUNCHES	CHES								
ALPHA	VANGUAGO	;	:						
ALPHA 2		⊒ :	s :	17 FEB	123.2	23.2 32.9	3088	260	
	VANGUADO A	71	s :		127.5	32.9	3469	557	
10TA 1	ר משמט מאש	07	SO		126.9	33.3	3459	515	
	¥ .	55	SO		99.1	50.3	800	531	
7 .		112	USSR		HELIDO	ENTRIC OF	ORBIT		
2	PIONEER 4	113	O.S		HEL I OC	ENTRIC OF	ORBIT		
1960 LAUNCHES	HES								
ALPHA 1	PIONEER 5	7.2	S P	11 MAR	HEL I OC	HELIOCENTRIC OF	08811		
1 × 1 × 1		28	SO	1 APR	94.46		405	68.2	
0C1A 2	IROS 1	53	Sn	1 APR	98.5	\$ · 8.4	705	100	
4 V 1 D		115	SO	1 APR	98.7	4.8.2	7.46	A6.7	
	TRANSIT ZA	\$ \$	SD	22 JUN	100.9	66.7	1005	5 6	
	GREB	9	SO		100.4	66.7		0 K	
7) ·		14	ns		100.5	66.7	972	904	
4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		048	SO		98.7	66.7	825	0.45	
٩,		841	SO	22 JUN	98.6	66.7	815	5 V	
V 4 101		50	SO		118.1	47.2	1684	1503	
		2	Sn		118.2	47.2	1685	1510	
		52	Sn	12 AUG	CURRENT		z v	TAINED	
	9	53	SO		118.4	47.3	1687	1529	
- C	COOKIEK 18	58	ns		107.1	28.3	1213	996	
		66	S		106.6	28.3	1210	925	
• •	TIDOR 3	09	S		104.0	6.64	1498	399	
. Id	2 5021	6033	SO:	m, i	O.	48.5	639	505	
		7760	ń	23 NOV	105.2	47.0	1036	975	
1961 LAUNCHES	HES								
A D.C. F.									
L ANNAG	· • • • • • • • • • • • • • • • • • • •	19436	SO		95.1	58.3	532	517	
	T CKINA	08	USSR	12 FEB	HELIOCENTRIC		0R81 T		
		85	S		117.9	38.9	2535	636	
		92	Sn		109.6	38.8	1834	200.0	
0 × - 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		3927	Sn	16 FEB	111.7	38.9	1003) Y	
<		920%	Sn		112.0	38.9	2029	400	
7 ·	EXPLORER 11	101	SO		105.1	28.8	1513	2 4	
N. ≥		3739	SO	27 APR	9-00	9 60	2101	107	
	TRANSIT 4A	116	S		103.6	0 4	# 10 C	6/3	
OMICRON 2	E-WS-NOCN!	117) U			0.00	690	870	
OMICRON 3 .	- 297	•	3 -	200	•	8.00	686	874	
			ŝ	NOC 62	SEE NOT	ш	10		

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- A Description of Table 1 T

		JUB JE	שטברוט זיא טא					
INTER-	CATALOG			PERIDO	INCL I-	APOGEE	PERIGEE	TRANSMITTING
DESIGNATION NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NAT I ON	X X	X.	FREG.(MHZ)
1961 LAUNCHES (CONT.)								
KC N00071110	1.38	ns	NOC 62	103.4	67.2	446	897	
		SO	NOT 62	103.0	66.7	596	829	
	162	SO	12 JUL	1001	47.9	795	726	
. ~	165	O.S		986	47.9	715	0.49	
	166	SN		0.56	47.9	5.40 6.40	164	
	167	Sn	12 JUL	101.6	47.9	406	760	
SIGMA 1 MIDAS 3	163	SN		161-4	91.2	35.00	1310	
F	188	NS		161.1	91.2	05.55	5518	
AMP 4	961	SO	2	161.8	91.2	5965	1976	
A DELTA 1 MIDAS 4	192	SO	-	165.9	95.8	3763	2466	
OFLIA 3	104	S)	_	165.5	95.8	3843	3369	
	195	so	21 OCT	166.3	6.56	3879	3399	
DEL TA	5 0 0 5	sn	21 OCT	165.7	95.8	3733	3493	
0 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2	2371	SO	21 OCT	165.2	62.6	4724	2468	
F 4 F -		SO	15 NOV	105.8	32.4	1105	400	
ETA 2 TRAAC		90	15 NOV	105.8	32.4	1108	926	
J F	204	SO	15 NOV	105.6	32.4	1097	026	
7 7 4	96201	SO	S	ŝ	32.4	1107	955	
1962 LAUNCHES								
E GROAD	221	SO	26 JAN	HEL 10		0RB1 T		
	222	SO	٥	HEL TO		0RB11		
BETA 1 TIRUS 4	226	S	8 FE8	100.0	48.3	817	969	
. ~	227	Sn	8 FEB	100.7	48.2	697	989	
BETA 3	228	SN		98.2	48.4	692	029	
	559	Sn		98.2	48.3	708	450	
KAPPA I	271	SO.		152.9	86.7	3408	2780	
	273	Sn		152.5	86.7	3373	2783	
KAPPA 4	274	Sn	φ.	153.3			7 (00	
MU 2	282	S O	m	HELIC		URBII		
A ALPHA 1 TIRUS 5	309	Sn	ο.	0 1	196	0 5	000	
A ALPHA 2	311	Sn	-	1.06	D * 0	210	707	
A ALPHA 3	312	sn:	O (100.5	0 0	7 4	095	
	31.3	٠ : ۵	2	74.0	0 0 0	2,465	8 70	
EPSILON	0 r 4 r	n u		157.6	44	5626	946	
	110	5 5		98.3	9.86	171	587	
MICKOR	400 400	50		96.3	98.5	949	519	
A USTANCE A	0 00 PM	s S		9.96	98.5	652	536	
	374	SO	27 AUG	HELI		ORBIT		
BHO 2	375	Sn	27 AUG	HELI	HEL 10CENTRIC	ORBIT		
	397	SO	18 SEP	97.8	58.3	999	641	
1 100	399	SN		97.8	58.4	189	627	
410	1 424	CANADA		105.2	80.5	1023	988	
AL DHA 2	456	SO		105.3	80 - 5	1020	266	
4 10 14	510	SO.	29 SEP	105.2	80.5	1014	066	
	511	SO		105.3	80.4	1031	486	
FIA	06.4	SO	18 OCT	HELI	HEL I OCENTRIC	ORBIT		
FIX 2		sn	18 OCT	HEL I	HEL I OCENTRIC	ORBIT		
ς -								

\$ F

			OBJECTS	CIS IN ORBIT	ыт				
NATER-		CATALOG			001010	-1 -1 -1	APOGFF	DFQ IGE	TRANSMITTING
DESIGNATION	NAME		SOURCE	LAUNCH	MINUTES	NATION	. X	K.N.	FREG. (MHZ)
1962 LAUNCHES	S (CONT.)								
N D E	ANNA 18	9	SD	31 OCT	107.9	50.1	1182	1075	
Ş	'	447	SO	_	107.6	50.1	1164	1066	
Ž		450	USSR	ACN I	HEL I OC		ORBIT		
SILON	RELAY 1	503	SO		185.1	47.5	7431	1328	
		515	SD		184.8	47.5	7412	1329	
	EXPLORER 16	905	Sn	16 DEC	104-1	52.0	1163	745	
1963 LAUNCHES	. 83								
1963 0:44	1 MOUNAS	553	S	14 FEB	CURRENT		ELEMENIS NOT MAINTAINED	IT A I NED	
		566	USSR	~	BARYCE		317		
	⋖	573	NS		225.3	42.8	10801	196	
		575	SO		225.0	42.8	10793	096	
1963 C14A		574	SN		166.4	87.3	3681	3602	
1963 0146	ERS 5	679	SO	9 MAY	165.2	87.3	4903	5289	
1963 014C		609	SO	AW 6		87.3	3735	3548	
1963 0140 -	014FE		ns	9 MAY	SEE N	NOTE	\$\$		
1963 C14FA		20033	Sn		163.1	85.2	5977	1047	
		603	50		97.1	80.9	628	613	
		919	S	9	96.6	0.06	618	571	
	TIROS 7	\$0.9 ***	S :	0 1	7.90	58.2	513	400	
		910	n 4	25.	110.0	* * * * * * * * * * * * * * * * * * *	3732	126	
1963 030A	יי א מושר מי א מושר	635	s s	5 5 5 5	167.8	9 9 9	3722	3675	
		630	50		167.4	88.4	3745	3623	
		631	O.S	1.8 JUL	168.2	88.4	3769	3662	
1963 030F		3121	ns	18 JUL	167.8	88.4	3730	3667	
		3132	Sn		167.8	88.4	3751	3648	
1963 030H		20153	ns		163.3		5757	1281	
1963 031A	SYNCOM 2	929	sn		CURRENT		S NOT MA	INTAINED	
		699	S		107.0	80.0	1104	1068	
		0.29	s ·	28 SEP	107.2	80.0	1127	1063	
	88 NS	129	S :		107-1	6.00	1124	1063	
		2/9	s c		100.3) () () () (0801	1052	
		547	ŝ		0.001	^ · ^ ·	0001	2001	
		2002	s :		100.4	o • • • • • • • • • • • • • • • • • • •	9901	201	
		0100	s :		7.701	A 6	0711	000	
		12943	٠ د) ·	0001		
		20470	s c		106.7			500	
		*/0	s ·	•	CORREN				
		695	s :		CORRENT		Z	NI A LNED	
4 / 4 O	CENIAUR	700	n (****	6761	7	
	0, 00		\$		י נונו נונו	10k	*		
		103	S		106.7	1.06	1082	1001	
		404	SO		106.9	90.1	1113	1057	
1963 0490		705	S		106.9	90•1	1110	1056	
		406	S		106.6	90.1	1089	1044	
1963 049E		715	SO		106.0	0.00	1058	1019	
1963 049F		753	SO	5 DEC	106.7	90.1	1097	1045	
1963 0496		2432	Sn	S DEC	106.9	90.1	1110	1055	

NATIONAL	Ā		CATALOG			001030	1 1001	2000		
DESIGNATION	ATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES		KM.	7 X 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	FREG. (MHZ)
1063	1 ALINCHE'S	F.S. (CONT.)								
) }	,									
	H690		2620	SO	5 DEC	106.3	90•1	1066	1044	
	0538		721	50		115.3	78.6	2335	598	
	053C		722	sn	19 DEC	1111	78.7	1.907	651	
	053E		724	SD	19 DEC	110.3	78.6	1862	919	
	0536		726	SO		107.6	78.5	1636	592	
	-53H		732	SO		1111.0	78.6	1907	636	
E 90	053J		3750	SO		109.5	78.6	1785	619	
	053K		17665	SO	19 DEC	111.5	78.7	1926	661	
	0.54A	TIROS 8	716	Sn	_	98.7	58.5	710	677	
	0.540		720	SO	Z1 DEC	100.3	58.5	865	675	
1963 1	054E		19396	'n	21 DEC	98.4	58.5	705	657	
1964 L	LAUNCHES	ES								
1964 0	001A		727	50	NAL	F - F O 1	0,04	660	400	
1964 0	9100	GRAVITY GRADIENT	7.7.B) (24		A 0	776		
	001C	SECOR (EGRS) 1	729	80		103.3	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		100	
1954 0	0100	SOLRAD 7A	730	SO		103.3	0.09	920	400	
	001E	GREB	7.31	sn		103.3	6.69	920	903	
	002A		733	Sn		100.8	99.1	822	177	
	0028		734	SO	19 JAN	100.9	99.1	813	791	
	0020		735	Sn	•	101.0	99.1	817	793	
	003A	RELAY 2	737	SO		194.7	4.94	7532	1970	
	9000		738	S :		194.8	4.04	7534	1972	
			141	S 0 3		108.8	81.5	1301	1039	
			747	S 0		108.6	81.5	1295	1032	
	000A	ELEKTRON 1	7 4 7	80	NAC 05	100.0	81.0	1295	1030	
	0068		6.47	USSB		4.65.1	60.00	40076	413	
	- 2900	00 6 A D	•	USSR		SEE	NO TE 64	? ? ?		
	0910	1 QN02	785	USSR		HEL I OC	TRIC OR	. 1		
	026A		108	ns	NOS *	102.3	90.5	906	831	
	0.26B		805	sn	•	102.4	6.68	006	841	
	7020		908	s i		8.66	8.06	793	701	
9 9 9 9	0.000		608	s o		102.6	90.5	922	639	
	314		0 0 0	n (102.7	90.5	956	842	
			210	۸ <u>بر</u>	N .	101.3	8 * 6 6	822	916	
			010	n (101.3	9.60	824	816	
	384	F. MOOT WITH	0 4 0	200	NO. 18.	101.1	6.66	820	803	
	0.38C		8 41	400	3 =	701	200	6160	904	
	¥040			K 5 1	7 2	0.1.1	00.00 T E ENEMITE	0	166	
	0408		0000	7 2	= -	CURRENT			MAINIAINED	
1964 0	0418		843	5 S		BADVCF	-			
1964 0	047A	SYNCOM 3	858			TIDDENT	T EI FMENTS	1	CHITTING	
1964 04	0478		862	50		CURRENT			MAINTAINED	
	0440	COSMOS 41	869	USSR		714.6	71.2	•	2053	
	3640		808	USSR	22 AUG	716.5	71.3	38207	2083	
	049F		13091	USSR	22 AUG	714.4	71.1	37879	2307	
1964	051A	EXPLORER 20	67.9	NS	25 AUG	103.6	79.9	1004	856	

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INTER-				;					
NATIONAL		CATALOG			PERIOD	I NCL I-	APOGEE	PERIGEE	TRANSMITTING
DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	MI NUTES	NATION	K K	KM.	FREG. (MHZ)
1964 LAUNCHES	HES (CONT.)								
1064 0518		Ē	91	•			6	•	
490	AA SOMSOS	876	200		7 9 0) · ·	V .		
	•	877	8550		0.00	1.66	126	190	
	000 1	618	SO		CURRENT		AM TON S	TNIAINFO	
1964 063A	NNSS 30010	893	SO		106.2		1068	1031	
1964 063B		897	SD		106.4	106	1073	1047	
1964 063C		006	Sn		105.6	0.06	1040	1007	
		901	SN		106.4	90.1	1070	1048	
		905	SO	6 OCT	106.5	0.06	1076	1040	
		£0%	SN		105.5	0.06	1034	1005	
	EXPLORER 22	899	SO		104.4	7.67	9501	874	
		106	Sn		104.5	7.67	1060	877	
		916	SO	0	103.2	70.3	1008	810	
		277	ns		104.9	80.0	1001	068	
	r)	923	SO	ហ	HELIO	MELIOCENTRIC ORB	1817		
	EXPLORER 25	932	s n		114.8	81.3	2371	524	
		933	SO		114.2	81.3	2311	524	
	MARINER 4	938	Sn	80	HELI OC		ORBIT		
		945	Sn	28 NOV	HEL I OC	HELIOCENTRIC OR	ORBIT		
		945	USSR		HELIO	HELIOCENTRIC OR	ORBIT		
	NNSS 30020	953	SO	m'	106.0	80.8	1063	1018	
		926	S	m	105.8	89.8	1056	1002	
		656	s :	m	105.9	80.8	1066	1010	
0000 500		6 ()	S O	m i	106.2	80.8	1078	1018	
			s s		105.8	60.00	1056	1003	
) () () () () () () () () () (n u	7 "	105.9	80 ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° °	1065	0101	
	EXPLURER 26	3 8	2	אַר אַר אַר	ָר ס	OV.S			
		•	3		C CARACT		2	MAINIAINEU	
1965 LAUNCHES	HES								
1965 004A	TIROS 9	976	SN	22 JAN	119.0	4-90	2500	702	
1965 0048		976	SO	22 JAN	80		2552	707	
1965 004C		1312	SO		117.6	96.3	2471	699	
		1313	Sn	22 JAN	120-1	96.4	2640	728	
		1001	s n		145.4	32.1	2797	2766	
		0001	SO	_	145.7	32.1	2803	2783	
1905 0380		1002	s o	 1	145.8	32.1	2809	2783	
	9	1001	n u	17 758	BARYCE	ž			
	TIV COADIENT	7.77	9 :		2.501	1.07	976	C 40	
		1000	n (C*COT	1.0	626	- 50 - 50	
	GRAUICN:	2621	S 1	¥ 4 4 5	103-1	70-1	616	686	
	CECOO / CCOC) 3	1000	2 :		0.00	1.0	726	80 1	
		0021	ň (X 6	5.501	1.07	826	868	
		1 2 7 3))		A . 70 .	0.	706	1881	
		7771	ñ (0.00	100	659	55.0	
		12030	ñ U		7.501	1.07	976	7 100 000 000 000 000 000 000 000 000 00	
		744	9551		7	1.04	D 1 4 .	00 4	
		1347	800	, c	•	1 0		C 4	
		i I	; ; ;)	,	,) •) }	

NAME	CATALOG NUMBER	SOURCE	LAUNCH	PER 100 MINUTES	INCLI-	APOGEE KM•	PERIGEE Km.	TRANSMITTING FREG. (MHZ)
(CONT.)								
	1370	USSR	15 MAR	103.9	56.1	1349	532	
	1392	USSR	15 MAR	105.4	55.9	1506	523	
	1477	USSR		112.1	55.5	1812	830	
	1478	USSR		110.1	56.1	1828	634	
	1479	USSR		114.9	56.0	2099	803	
	1480	325		7 - 4 - 1	1 • 00	0017		
	1495	USSR		104.5	0.00	1364	010	
	1549	SSS		114.5	56.2	2002	177	
	1634	USSR		115.8	20.5	2177	209	
	2334	USSR		110.8	55.7	1743	786	
	2934	USSR	15 MAR	115.4	55.6	1752	1196	
	3038	2880	15 MAR	108.6	56.3	1730	265	
	3708	USSR	15 MAR	104.1	56.3	1597	61 0	
	3743	4880	15 MAR	118.1	56.7	1811	1381	
	3745	USSR	15 MAR	115.3	56.1	1661	1346	
	3749	USSR	15 MAR	107.9	56.1	1635	622	
	3931	USSR		116.6	56.1	1691	1359	
	3963	USSR		96.8	55.9	752	460	
	3965	USSR		117.8	56.3	1799	1364	
	6252	USSR		117.1	56.0	1695	1407	
	13517	USSR	15 MAR	109.6	55.6	1677	742	
	1298	SO	21 MAR	HELIO		08811		
EARLY BIRD	1317	1150	6 APR	1435.3	14 - 1	35802	35737	
	1314	SO	3 APR	111.4	90.3	1314	1270	
SECOR (EGRS) 4	1315	SN	3 APR	1111.4	90 - 3	1311	1266	
02780		Sn	3 APR	SEE N	NOTE	S.		
	20031	٩	3 APR	111.4			1265	
	1318	SO	6 APR	CURRENT			NOT MAINTAINED	
EXPLORER 27	1328	sn	29 APR	107.7	41.2	1318	952	
	1 358	s n	•	107.8	41.2	1318	726	
	2011	SD	29 APR	108.4	41.2	1229	1076	
	1359	ns	6 MAY	157.1	32.1	3741	2789	
	1 360	S	6 MAY	309.9	32.1	14810	2770	
	1361	SA		145.6	32.1	2798	2784	
	2529	SN	6 MAY	309.9	32 • 1	14807	2772	
	1377	SD	20 MAY	7.76	98.2	777	216	
	1378	s n	20 MAY	96.1	98.0	629	481	
LUNA 6	1393	USSR	350	HELIO	OCENTRIC O	0RB1 T		
NNSS 30040	1420	Sn	24 JUN	106.7	1.06	1128	1015	
	1428	s O	24 JUN	106.5	1 • 06	1105	1019	
	1425	SO	24 JUN	106.8	1.06	1130	1021	
	1435	SO	24 JUN	105.9	1.06	1001	984	
	2701	SO	24 JUN	106.1	1.06	1085	1002	
	3592	Sn	-	106-1	90.1	1088	1003	
	19062	50	24 JUN	101.5	89.9	868	792	
TIROS 10	1430	Sn	2 JUL 2	100.2	98.8	811	724	
	1433	Sn	2 JUL 5	7.66	98.6	783	708	
	1440	SO	2 JUL	0.96	98.6	617	217	
	1529	SO	2 JUL	101.5	99.1	857	802	
20ND 3	1454	USSR	18 JUL	HELIO	HELIOCENTRIC O	0R81T		

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INTER			08.78	BJECTS IN ORBI					
NATIONAL		CATALOG			PER 100		APOGEE	PERIGEE	TRANSMITTING
DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NAT I ON	км.	KH.	FREQ.(MHZ)
1965 LAUNCHES	HES (CONT.)								
1965 358A		1458	S	20 JUL	CURRENT		NOT MA	INTAINED	
		1459	SO	20 JUL	CURRENT		NOT	MAINTAINED	
	SECOR (EGRS) 5	1506	SO	0	122.2	69.2	2421	1132	
		1502	S :		Ļ	ru	2420	1134	
1065 0654	NAME OF COMMON ASSESSED.	1500	n u	1 A A G	107 7	NIKIC UKBII		940.	
		1508	n o	ריו נ	107.6	0.00	1145	1081	
		1510	Sn	m	105.9	0.06	1082	666	
		1511	Sn		108.0	0.06	1182	1081	
1965 065E		1512	Sn	13 AUG	108.0	0.06	1184	1082	
		1514	SN		107.9	0.06	1182	1078	
		1515	SO		107.3	0.06	1152	1051	
		1520	SO		107.9	0.00	1180	1077	
		1551	Sn		108.0	0.06	1184	1082	
		1577	ons.		107.9	0.06	1180	1076	
		1522	O.S		108.0	0.06	1185	1081	
		3810	Sn		107.3	0.06	1151	1051	
		5265	SO.		107.8	60.0	1155	1001	
		1570	JSSR		115.0	56.1	1540	1366	
1905 0708	CUSMUS B1	1571	2550		115.3	56.1	1542	1396	
	COUNTY OF	2/01	200	200	7.511	1.00	1661	6141	
		1013	ב מ מ מ מ	ת מ מ	0.011	100	7051	2441	
	_	\$/CT	2000		****	7 • 90	1973	1400	
		3045	U.S.S.R	S SEP	115.0	55.4	1730	1260	
		1580	50		101-3	0.80	1002	989	
		1583	s S		100.4	98.6	450	622	
1965 072E		1931	SN		101.9	6.86	1071	659	
1965 072F	-	1932	SD		98.5	98.3	776	594	
1965 073A		1584	USSR	18 SEP	115.0	56.1	1626	1287	
1965 0738		1585	USSR	18 SEP	115.4	56.1	1634	1317	
		1 586	USSR	18 SEP	115.8	56.1	1647	1338	
	S	1587	USSR		116.2	56.1	1660	1361	
	COSMOS 90	1588	USSR		116.6	56.1	1670	1389	
		1589	USSR		116.8	56.1	1679	1393	
		1590	USSR		115.9	56.1	1641	1354	
MC/0 6061		7001	2000		116.3	0.00	1001	3051	
200 0001		/101	2000		11/11	1.00	BC / 1	700	
		1018	28.50		117.4	56.2	1744	1381	
		2047	2880		116.0	56.1	1650	1348	
1905 078A		1613	s :		118.8	144.3	2846	604	
		1010	s :		9	144.5	£ 7.34) †	
0000	20.00		6 5		Ž	u i		1	
	EAPLORER AV	1 720	s i		120.3	20.4	22.72	1115	
		1729	S		120.3	59.4	2268	1116	
		2 700	SO		119.1	29.6	2219	1065	
		2883	SD		121.3		2321	1155	
965	VENERA 2	1730	USSR		HELIOCENTRIC		11		
ın ı		1736	USSR		I	ENTRIC DRBI	-	,	
1965 C93A	EXPLORER 30	1738	sn	1 0 NOV	100.3	59.7	881	999	

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1965 C936 1965 C936 1965 C936 1965 C936 1965 C96A 1965 C96A 1965 C96A 1965 C96B 1965 C96B 1965 C96B 1965 C96B 1965 C98B EXPLORER 31	CATALUG NUMBER	SOURCE	LAUNCH	PER I OD MINUTES	INCLI-	APOGEE	PERIGEE	TRANSMITTING
GNATION NAME LAUNCHES (CONT.) C938 093C 096A 096B 096B 099B EXPLORER 31	NUMBER		LAUNCH	MINUTES	NATION	3	2	
LAUNCHES (CONT.) 0936 0936 0968 0968 A-1 0968 0998 ALQUETTE						E	· E	FRE G. (MHZ)
093C 093C 093D 096A A-1 096B 099B ALQUETTE 098B EXPLORER								
093C 093D 096A A-1 096B 099A ALQUETTE 098B EXPLORER	1 739	SN	VON 61	100.0	59.7	832	680	
0930 0964 A-1 0968 099A ALQUETTE 0988 EXPLORER	2013	Sn		98.4	59.7	732	659	
0964 A-1 0968 0960 ALGUETTE 0988 EXPLORER	2088	Sn		100.2	28.7	848	069	
096B 096D 099A ALQUETTE 098B EXPLORER		FRANCE		107.7	34 • 3	1714	529	
096D 099A ALQUETTE 098B EXPLORER	1805	FRANCE		106.5	34 • 3	1607	523	
099A ALGUETTE 098B EXPLORER		FRANCE	_	102.5	34.2	1244	201	
0988 EXPLORER	1 804	CANADA		118.6	79.8	2733	501	
	1806	S		120.2	79.8	2879	501	
	1 807	SO	29 NOV	119.1	79.8	2781	501	
-	1808	SO		108.3	79.8	1813	483	
	1944	SO		107.4	79.8	1728	481	
1965 098F	1948	SO	29 NOV	114.3	40.07	2346	498	
1965 098G	1951	SO	29 NOV	114.6	79.7	2382	491	
1965 098H	2002	SN	29 NOV	118.9	79.9	2755	204	
1965 098J	2153	SO	29 NOV	118.6	79.7	2733	502	
1965 098K	20833	SN	29 NOV	115.0	79.8	2411	498	
1965 101A FR-1	1814	FRANCE		0.66	75.9	715	706	
1965 1018	1815	Sn	6 DEC	98.8	75.9	708	969	
1965 105A PIGNEER 6	1841	Sn		HEL I OC	OCENTRIC OF	08811		
	1843	USSR		95.7	0.59	611	495	
	1844	USSR	17 DEC	95.3	65.0	548	520	
1.955 109A NNSS 30060	1864	SO	22 DEC	104.7	89.1	1063	894	
-	1865	SO		104.7	89.1	1067	868	
1965 109C	2086	SO		101.0	89.1	828	784	
1965 1090	2226	SD	22 DEC	106.8	ċ	1271	689	
	2353	SD		•	0	ŏ	876	
1965 1120	1937	USSR	28 DEC	6.46	55.9	531	495	
1966 LAUNCHES								
		:		i c	(6	
	70.61	2 5	200	C*CO!	0.00	9911	000	
1900 0000	1933	6 U		103.0	· ·		200	
1960 0001	21.40	n 0	242	7 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6		0 * 0 1	0 4	
	2880	\$ Y	NAL AC	4-001	0 4 6 6 4	1001 1001	616	
	2989	so		103.7	89.9	1024	838	
	11991	SO		105.2	89.8	1162	844	
1966 0060	2001	USSR		BARYCE	0	RBIT		
1966 008A ESSA 1	1982	Sn	3 FE8	8*66	6.76	811	686	
1966 0088	1983	SO	3 FE8	99.5	97.8	799	299	
	2085	S		97.2	7.70	149	603	
1966 008D	2118	SO	3 FEB	100.5	0.86	891	670	
1966 008E	2154	SO		99.3	7.76	174	678	
1966 013A D-1A	2016	FRANCE		116.3	34 . 1	2522	205	
1966 C13B	2017	FRANCE	17 FE8	115.3	34 • 1	2430	503	
1966 013F	2023	FRANCE		97.8	34.0	885	422	
1966 0136	2161	FRANCE	_	109-5	34.1	1902	503	
	2091	SO	Ф	113.4	100.9	1412	1352	
	2096	S O	L	113.4	101.0	1412	1351	
1966 0160	2223	S	28 FEB	111.8	101-1	1381	1238	

- OFFINE			08JECTS	CTS IN ORBIT	ыт				
NATIONAL		CATALOG			PER100	INCL 1-	APOGEE	PERIGEE	TRANSMITTING
DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NATION	X.	KN.	FREG. (MMZ)
1966 LAUNCHES	(CONT.)								
1966 0160		2224	SO	28 FEB	115.0	101.2	1562	946	
1966 016E		6214	Sn	FE	*	010	1513	1328	
024A	NNSS 30080	2119	Sn	26 MAR	104.9	89.8	1101	882	
0248		2120	SO		105.0	O.	1107	885	
025A	0V1-4	2121	SO		104.0	4	1009	885	
0258	041-5	2122	5		105.6	4	1057	983	
		2123	s :		105.6	44	1057	786	
		2124	s c	30 MAR	104.0	4 3	1006	887	
		3611	s :		102.9	4	646	839	
		5361	S.		103.9	4	981	908	
		5599	S		102.9	4	945	847	
		2125	S		90.66	98.4	867	608	
		2129	SD		67.6	98.2	747	269	
		2177	SO		100.4	6.86	956	299	
		2179	SN	31 MAR	96.5	98.1	650	527	
	LUNA 10	2126	USSR	31 MAR	SELEN	SELENDCENTRIC C	0RB I T		
1966 027D		2130	USSR		HEL I O	HELIOCENTRIC OF	ORBIT		
		2131	USSR		BARYC	BARYCENTRIC ORE	111		
1966 027F		2132	USSR	31 MAR	BARYCE	BARYCENTRIC ORBIT	111		
	1 0,	2142	SN	8 APR	100.1	35.0	79.6	785	
1966 0318		5144	SO	8 APR	100.3	35.0	782	767	
034A	0V3-1	2150	S	22 APR	135.2	82.4	4350	344	
0348		2167	sn		117.1	82.4	2775	329	
V040	NIMBUS 2	2173	SO	ß	108.0	8	1175	1001	
040B		2174	S)		107.8	100.5	1166	1081	
041A	NNSS 30090	2176	s O		102.9	0.06	952	839	
		2180	S	σ.	103.0	o•06	963	845	
		2225	SO.	0	99.2	60.08	750	695	
		2644	s :		105.0	90-1	1161	831	
		3591	s :	o (102.9	0.06	953	040	
		4555	S :		102.0	_		900	
95%0 99%1	•	2197	s o	_	BARYCE	=	_		
		2617	n (٠,			Z	AT A I NED	
1066 052A		1022	n u		142.0	B • 0 •	4712	650	
		0000	0 1	٠ د	0.041) ·	7804	7 6 6	
		25.16	n u		100.0	0 0	0744	286	
		2002	n u		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0) · (*			
		1000	2 :	٠,		7.	00000	23003	
		2215	s o		1334.5	11.5	33880	33667	
		0177	∧ (۰ ،		o • •	33923	33657	
0000 0001		7177	s (1336.5	0	33989	33637	
		8177	ŝ	٥	1338.6	0.80	34017	33694	
		2219	ns		1340.9	8.0	34093	33712	
		2220	SO	16 JUN	1344.0	8.9	34230	33695	
1966 053H		2221	ns	16 JUN	1347.6	5.0	34359	33711	
0533		2222	Sn	16 JUN	1349.4	12.0	34737	33405	
056A	PAGEOS 1	2253	Sn	3	178.1	85.6	4044	3269	
		rv.	SO	3	181.1	O	4279	4173	
٥			SO	24 JUN	181.3	86.9	4276	4190	
1966 0560		2511	SO	24 JUN	181.5	87.0	4257	4220	

() ()			08 JECT S	Z	ORBIT				
INIEK-		CATALOG			PERIOD	I NCL I -	APOGEE	PERIGEE	TRANSHITTING
DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	z	KM.	KN.	FREG. (MHZ)
1967 LAUNCHES	HES (CONT.)								
1967 0018		5990	ns	11 JAN	CURRENI	I ELEMENTS	NOT MAI	NTAINED	
1967 001W		5998	Sn	11 JAN	387.1	29.8	22148	283	
1967 001X		6119	SN	11 JAN	656.6	27.7	36661	631	
1967 001AM		14756	ns	11 JAN	374.5	26.7	21377	286	
		19518	S)	11 JAN	513.1	26.3	29174	529	
		20102	sn	11 JAN	530.7	27.1	30091	576	
1967 003A		2645	SN	18 JAN	CURRENT	FLEMENTS	NOT	MAINTAINED	
1967 0038		2649	SO	18 JAN	CURRENT	I ELEMENTS	NOT	MAINTAINED	
1967 063C		2650	c o	18 JAN	CURRENT	FLEMENTS	NOT	MAINTAINED	
1967 0030		2651	SO	18 JAN	CURRENT	FLEMENTS	NOT	MAINTAINED	
1967 003E		2652	SN	18 JAN	CURRENT		NOT	MAINTAINED	
1967 003F		2653	SO	18 JAN	1871.5	0.9	53810	34044	
1967 0036		2654	SN	18 JAN	CURRENT	Ä	NOT	MAINTAINED	
1967 003H		2655	SO	18 JAN	CURRENT	ELEMENT	NOT	MAINTAINED	
1967 0033		2660	SN		CURRENT		NO T	MAINTAINED	
	ESSA 4	2657	SO	26 JAN	113.4	102.1	1437	1324	
		2661	SO	٥	113.5	102.0	1439	1339	
1967 006C		2706	SO		114.2	102.1	1446	1390	
1967 0060		2707	SO	26 JAN	112.5	101.9	1457	1229	
1967 006E		5971	GS.	26 JAN	113.1	102.0	1454	1280	
1967 01CA		5 669	SD	_	101.1	99.1	849	774	
		2741	SN		101.1	0.66	851	770	
1967 011A	DIADEME 1	2674	FRANCE	8 FEB	101.7	0.04	1130	550	
		2671	FRANCE	8 FEB	102.5	0.04	1200	556	
	DIADEME 2	2680	FRANCE		108.9	39.4	1761	589	
		2682	FRANCE		109.4	39.5	1807	586	
		5684	FRANCE		106.9	40.0	1593	575	
		2685	FRANCE		106.3	38.9	1538	568	
		14505	FRANCE		107.2	38.8	1607	583	
		14633	FRANCE		98.3	39.4	852	505	
		15531	FRANCE		98•1	30.4	830	504	
		18911	FRANCE		110.4	38.9	1915	929	
		18928	FRANCE		98.3	39.4	846	206	
		18929	FRANCE	ŝ	6*86			513	
	INTELSAT 2 F-3	2717	1150		CURRENT		Z	ITAINED	
	0	2720	USSR		95.4	26.0	399	384	
	NNSS 30120	2754	Sn		106.2	90.1	1066	1038	
		2755	S		106.4	90.1	1072	1044	
		2777	ns		103.4	90.3	1024	813	
		2778	SO	-	108.2	90.2	1241	1048	
		4843	SD	4	106.6	**06	1092	1049	
		2764	ns		>	CENTRIC ORBIT			
	ESSA 5	2757	SO	0	113.5	101.9	1419	1352	
		2758	SD		113.5	102.0	1417	1354	
1967 036C		2976	Sn	20 APR	112.3	102.2	1408	1256	
1967 0360		2977	SO	20 APR	114.6	101.3	1481	1388	
1967 0398		2763	USSR	27 APR	93.1	81.2	450	403	
1967 043A		2765	Sn	28 APR	CURRENT		NOT	MAINTAINED	
1967 040U		2766	SO	28 APR	CURRENT		NOT	HA I NT A I NED	
1967 040C	ERS 18	2767	s n	28 APR	CURRENT	I ELEMENTS	NOT	MAINTAINED	

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NATIONAL Designation	NAME	CATALOG	SOURCE	LAUNCH	PER100 MINUTES	INCL I-	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREG.(MHZ)
LAUNCHES ((CONT.)								
		2768	NS		CURRENT	ELEMENTS	NOT	MAINTAINED	
040E ERS	7	2769	S O	28 APR	CURRENT			maintained maintained	
5 F F S		2780	s s		6.46		5	465	
	COSMOS 158	2801	USSR		100.3	74.0	813	729	
0.458		2802	USSR	ر د	100*1	74.0	817	711	
		2823	USSR 3.5		4 6 6	0.4.0	100.	260	
C4GA NNSS	00100 c	2811	<u>^</u>		1001	0 0	1000	1000	
0.640		17723	S S		103.2	89.6	946	870	
0480		19222	SD	a	104.1	89.0	1006	896	
053A		2826	Sn	31 MAY	101.8	6.69	857	834	
0538		2825	SN		103.2	70.0	913	506	
	GRADIENT	2828	SD		103.2	70.0	913	306	
-	GRAVITY GRADIENT S	2834	sn		103.2	70.0	915	206	
0536		2847	SO		103.0	70-0	406	897	
053F		2872	s :	_	103.1	70.0	606	902	
0536		2873	s :		103.2	0.07	912	\$ 06	
053H		2874	s :		103.2	0.07	916	206	
D53J		5005	s :	31 MAY	101-6	0.0	٠ ص	830	
		200	<u> </u>	-	O O CARROLL AND THE			0	
0608	BAKINGK U	V 00 40	\$ S	NOT #1	HEL TOCENTRIC	ENTRIC ORBIT	- Ju		
065A SECOR	TOR (EGRS) 9	2861	SO		172.1		3947	3791	
-	1 4	2876	SN	-	172.1	1.06	3948	3790	
		2877	sn	29 JUN	172.1	0.06	3952	3786	
-	ITAN 3 C-14	2862	Sn	1 JUL	1309.7	1.2	33540	33010	
0668		2863	SN	1 JUL	1310.4	1 • 2	33549	33030	
066C		2864	ns	ישר ו	1311.7	o•o	33544	33085	
0000		2865	SD	- -	1313.6	0.0	33568	33139	
		2866	Sn	- -	1316.1	0.	33608	33198	
0.66F DODGE	XG E	2867	Sn	- 첫	318	5.2	8	33270	
2666		2868	s :		1319.1	10.0	33656	33272	
068B	FYDI ODED 35	2883	s v	7 7 7	BARYCEN SELFNO	BARYCENTRIC ORBIT	- 4 - 1		
		2908	s S		BARYCE	BARYCENTRIC ORBIT			
0.8CA		2920	SO		101.9	99.1	876	618	
0808		2940	SO	23 AUG	101.8	0.66	873	810	
0848		2938	SN.		BARYCE	BARYCENTRIC ORBIT	_		
U92A NNSS	55 30140	2965	SN	25 SEP	106.5	89.2	1103	1028	
0928		2967	Sn	25 SEP	106.6	89.2	1102	1032	
092C		2994	SO	S)	103.8	89.4	1013	862	
0 92 0		3122	SO	25 SEP	108.9	89.1	1318	1031	
0926		17176	S	25 SEP	102.5	89.2	868	855	
0.92H		20009	SO	so.	102.4	89.2	897	844	
0957		20652	Sn	25 SEP	102.4	89.2	898	846	
¥46	INTELSAT 2 F-4	2969	1150	60	1436.2			35760	
0940		2971	SD		CURRENT		2		
0.96A		2980	SD		99.3	99.5	807	643	
0.068		2085	SD	TUULI	00,0	00	407	44	

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NATIONAL	NAL		CATALOG			PERIOD	INCL I •	APOGEE	PERIGEE	TRANSMITTING
0E.S.I.C	DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES		KM.	Ä.	FRE G. (MHZ)
1967	LAUNCHES	HES (CONT.)								
1967	1028		3011	USSR	24 OCT	93.4	81.2	67.4	€04	
1961	1048		3019	USSR	_	96.1	64.1	665	481	
1967	1114	ATS 3	3029	Sn		1436.1	13.4	35877	35697	
1967	1128		3034	SO	7 NOV	BARYCENTRIC	NTRIC ORBIT			
1967	1 14A	ESSA 6	3035	SO	10 NOV	114.8		1483	1406	
1907	1148		3036	Sn	ADN OT	114.8	102.2	1483	1408	
1967	114C		3051	SO	10 NOV	114.1	101.4	1482	1343	
1967	1140		3123	SO	10 NOV	115.4	102.5	1493	1449	
1961	114E		5443	Sn	10 NOV	114.6	101.6	1484	1386	
1967	1164	COSMOS 192	3047	USSR	23 NOV	99.3	74.0	729	721	
1967	1168		3048	USSR	23 NOV	99.5	74.0	724	716	
1961	123A	PIONEER 8	3066	SO		HEL I DC	ENTRIC ORB	11		
1961	127A	COSMOS 198	3081	USSR	_	103.4	65.1	460	106	
1968	LAUNCHES	ES								
1968	0018		3092	ns	7 JAN	BARYCENTRIC	NTRIC ORBIT	j		
1968	002A	EXPLORER 36	3093	SN	NAL 11	112.2		1572	1079	
1968	002H		3094	sn Sn		112.1	105.8	1565	1077	
1968	002C		3126	SO		112.3	106.1	1582	1082	
1968	0020		3127	SO		112.1	105.3	1569	1075	
1968	011A	COSMOS 203	3129	USSR	_	109.2	74.0	1199	1181	
1968	6119		3131	USSR	20 FEB	109.2	74.0	1202	1180	
1969	012A	NNSS 30180	3133	SD	2 MAR	106.7	0.06	1132	1015	
1,968	0128		3137	S	2 MAR	106.8	0.06	1134	1017	
1968	012C		3213	SO		104.7	0.06	1083	878	
1968	0120		3214	Sin		108.6	90.1	1304	1019	
1968	3710		18594	so		100.8	0.06	833	762	
1968	013A		3134	ดรรษ		HEL I OC		_		
1968	014A	060 5	3138	s :		CURRENT		ON	MAINTAINED	
800	200		3330	s :		CURRENT		בו ל עם	MAINTAINED	
0067	2 2 2		0000	200	ο.	****	0.40	n .	3	
000	0670		1010	א מ מ מ מ	7 W C C	7.50	2.18	110		
1068	4660		31715	X ()		1001	0.00	6760	100	
1968	0268	31120	3176	9 2		207.2	0.001	0852	0 0	
1968	0260		3177) S		207.1	0 0 0 0 1	0850	585	
1968	0.260		3212	Sn		198.4	0.00	9192	588	
1968	027A	LUNA 14	3178	USSR		SELENO	u	08811		
1968	4040	COSMOS 220	3229	USSR		98.3		711	449	
1968	9040		3230	USSR	7 MAY	98.1	74.0	669	633	
1968	042A		3266	SN		101.9	0.66	886	807	
1968	0428		3271	O.S	23 MAY	101.8	6.86	883	805	
1968	9640		3283	USSR	12 JUN	1.06	81.2	287	272	
1968	050A		3284	SN	13 JUN	CURRENT	T ELEMENTS	NOT	MAINTAINED	
1958	0508		3285	Sn	13 JUN	CURRENT		NOT	MAINTAINED	
1968	050C		3286	sn.	13 JUN	CURRENT		HON	MAINTAINED	
1968	0200		3287	sn		CURRENT		NOT	MAINTAINED	
1968	050E		3288	Sn		CURRENT		NOT	MAINTAINED	
1968	050F		3289	ns	-	CURRENT		NOT	MAINTAINED	
								·		

1			969	OBJECTS IN ORBIT	311				
NATIONAL		CATALOG			PERIOD	INCL I -	APOGEE	PERIGEE	TRANSMITTING
DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NAT I ON	KM.	KM.	FREG. (MHZ)
1964 LAUNCHES	HES (CONT.)								
1968 0506		3290	sn	NOC ET	CURRENT		NOT	MAINTAINED	
1968 050H		3291	S	13 JUN	CURRENT		NOT	MAINTAINED	
1968 0503		3292	SD	13 JUN	1363.7	12.2	35031	33682	
	EXPLORER 38	3337	s n		224.2	120.8	5868	5827	-
		3315	so		155.7	120.6	5744	677	
		3848	ns n		224.1	120.8	5865	5822	
		4841	o.s	-	155.4	120.8		623	
		3334	Sn		CURRENT		Z	TAINED	
	EXPLORER 40	3338	S	_	117.9	80.7	2498	677	
1968 066C		3341	SO		117.8	80.7	2486	679	
1968 066D		3342	SO	8 AUG	109.5	80.7	1756	651	
1968 066E		3343	SO	8 AUG	106.6	80.6	1523	615	
		3390	S O		110.2	80.6	1818	652	
1968 0666		3391	SO	B AUG	109.2	80.7	1750	631	
1968 066H		3392	SN.	8 AUG	112.3	80.7	9661	670	
1968 0661		3393	SO	B AUG	110.8	80.0	1873	653	
1968 069A	ESSA 7	3345	Sn	16 AUG	114.9	101.4	1471	1428	
1968 0698		3346	50	16 AUG	114.8	101.3	1463	1426	
1968 069C		3416	SO	16 AUG	113.6	101.9	1485	1299	
1968 0690		3417	Sn	16 AUG	116.1	102.3	1557	1455	
1968 069E		3974	SD	16 AUG	114.9	102.0	1477	1422	
1968 069F		3975	SO	16 AUG	114.9	101.6	1482	1414	
1968 0696		66 57	sn	16 AUG	115.1	101.4	1481	1435	
1968 081A	0V2-5	3428	Sn	26 SEP	1418.0	11.3	35770	35091	
1968 081C	ERS 21	3430	SN	26 SEP	CURRENT		NOT MAINT	TAINED	
		3431	SO		1437.2		35838	35777	
1968 081E		3432	Sn	26 SEP	1419.3	11.3	35818	35097	
1968 091A	COSMOS 249	3504	USSR	20 OCT	111.5	62.4	2070	524	
1968 0918	- 910P		USSR	20 OCT	SEE NOTE		\$6		
1968 092A		3510	Sn	23 OCT	101.1	98.6	832	786	
1968 0928		3552	SO	23 OCT	101.0	7.86	827	783	
1968 097A	COSMOS 252	3530	USSR	NOV I		62.3	2082	563	
			USSR		SEE NOTE		<u> </u>		
	Ωr.	3533	S		HELIOCENTRIC	ENTRIC ORBIT			
	COSMOS 256	3576	USSR		109.3	74.0	1221	1170	
		3577	USSR		109.2	74.1	1215	1162	
	0A0-A2	3597	S		100.0	35*0	762	154	
		3598	SD	~	2.66	35.0	784	704	
		3605	SO		~	4.08	1468	1377	
1968 112C		3617	Sn		114.0	80.2	1445	1373	
1968 1120		3618	Sn		114.7	80.5	1507	1373	
1968 112E		3840	Sn		114.4	80.6	1455	1401	
1968 114A	ESSA 0	3615	Sn		114.6	101.6	1461	1411	
1968 1148		3616	Sn	15 DEC	115.0	101.7	1467	1446	
1968 114C		3811	SO		112.8	102.0	1462	1248	
1968 114D		3812	SO		116.3	102.5	1571	1458	
1968 116A	INTELSAT 3 F-2	3623	1150	0	1475.2		37158	35938	
1968 1185		3627	S)	21 DEC	HEL I OC	HELIOCENTRIC ORBIT	111		

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1969 LAUNCHES

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	TRANSMITTING	FREG. (MHZ)																																																
	PERIGEE	Ä.	574	574	1393	1369	MAINTAINED	MAINTAINED	MAINTAINED	MAINTAINED			1423	1418		1177	1179	1166	475	486	569			ITAINED	1069	1067	1073			MAINTAINED	MATATARO	MAINTAINED	MAINTAINED	MAINTAINED	MAINTAINED	MAINTAINED	MAINTAINED			1771	768	265	35996	2355	2086	722	705	729	299	968
	APOGEE	X.	3479	3399	1428	1420	NOT	NOT	NOT	NOT		ORBIT	1503	1497	08811	1205	1192	1180	5617	5521	603	ORBIT	_	Z	1126	1127	1132	1180 10811	118	Ę		NOT	NOT	NOT	NOT	NOT	NOT	BI T	0RB1T	837	832	3631	36016	37282	36497	740	727	763	732	921
	INCL I -	NATION	88.4		80.4	86.2	AT ELEMENTS				HELIOCENTRIC OR	HELIOCENTRIC OR	101.5	101.5	HELIOCENTRIC OR	74.0	74.0	74.0	104.7	104.7	81.2		TRIC	AT ELEMENTS	100.0	0.00	7.3 100.0	SELIGICAL STATE OFFIT	HELIOCENTRIC ORBIT	AT ELEMENTS				IT ELEMENTS			IT ELEMENTS	HELIOCENTRIC ORBIT	SELENOCENTRIC O	6.86	98.8	30.3	12.8	17.9	17.2	74.0	74.0	74.1	74.0	70.0
B17	PERIOD	MINUTES	127.8	126.9	114.0	113.7	CURRENT	CURRENT	CURRENT	CURRENT	HELIO	HELIO	115.2	115.1	HELIO	109.2	109.1	108.9	151.8	150.7	96.4	HEL I O(HEL I OK	CURRENT	107.2	107.2	107.3	ACLI U	HELIO	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	CURRENT	HEL I OC	SELEN	101.0	100.9	126.0	1447.3	703.3	682.2	4.66	99.1	7.66	98.8	103.2
OBJECTS IN DRBIT		LAUNCH	30 JAN		5 FEB	5 FEB	6 FEB	6 FEB	9 FEB	9 FEB	25 FEB	25 FEB	26 FEB				17 MAR	17 MAR				~					14 APR								m	23 MAY	21 JUN	16 JUL			m			12 AUG	-					30 SEP
08 JE		SOURCE	CANADA	ns	SN	SD	1150	Sn	S O	SN	ns	SN	ns	SO	S	USSR	USSR	USSA	SO	ns	USSR	SO	s ·	ر د د	n 0	S :	s 9	S S	SO	1 T SO	SO	Sn	Sn	ns	SO	NS	O.S	O.S	SO	O.S	Sn	Sn	SO	sn	SO	USSR	USSR	USSR	USSR	s :
	CATALOG	NUMBER	3669	3670	3673	3841	3674	5977	3691	3695	3759	3760	3764	3767	3770	3818	3819	6829	3825	3827	3835	3837	3845	3889	7000	1980	3892	0 4 0 F	3940	3947	3950	3951	3952	3954	3955	3956	3993	0404	1404	4047	8505	4053	4068	6907	5991	4070	4071	4084	18912	4256
		NAME	1 5151				INTELSAT 3 F-3				MARINER 6		ESSA 9			C05M05 272			041-19			MARINER 7			NIMBUS S			LM/DESCENT	LM/ASCENT	INTELSAT 3 F-4	٠.	0.00	0.65-9						LUNAR MODULE			,	ATS 5			COSMOS 292				
INTER-	NAT I ONAL	DESI GNATION		1969 009B					1969 013A		1969 014A	1969 014B										0.00		1969 U36A		4 6				1969 045A																		1969 070:		1969 0828

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NATIONAL	JNAL		CATALOG			PER100	INCL I-	APOGEE	PERIGEE	TRANSMITTING
DESTO	DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NAT I ON	K.	KM.	FREG.(MHZ)
1969	LAUNCHES	HES (CONT.)								
1060	0.820		6250	Sn	30 SEP	103.3	70.0	927	905	
0.40	200		4217) v	ď	103.3	70.0	027	000	
1060	0.825		4247	s o		103,3	70.0	956	006	
1 069	0826		4295	SO		103.3	70.0	927	006	
1969			4168	SO		103.3	70.0	956	006	
1969			4166	SO		101.5	70.0	944	618	
1969	C 82K		4132	SO		102.4	70.0	883	858	
1 969		- 082LF		SO		SEE NOTE	TE 114			
1 060	0.84A	METEOR	4119	USSR			81.2	581	547	
1969	0.848		4120	USSR	6 OCT	95.3	81.2	588	478	
1969	091A	CDSM05 304	4138	USSR	21 OCT	9.66	74.0	751	731	
1969	0918		41 39	USSR		99.1	74.0	717	709	
1 96 9	0.97A	GRS-A/AZUR	4221	FRG		112.6	102.8	2314	375	
1060			4222	SI		0.401	102.9	1617	361	
90			4004) S		CLIDBENT	T FI FMFNTS	Z	TATAFO	
A 0 4 0 1		4 1 1 1 1 1 1 1	4250	7 =		4.4			35512	
× × ×		V - 1201 VC	146.4	2 0		•		_	TATMEN	
A 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			1024	500	36 200	- CONN.			0211	
200			+C2+	2000		600		741	0211	
6961	1038		4 255	0.55K		108.3	0.4	0011	1139	
1970	LAUNCHES	HES								
1970	003A	INTELSAT 3 F-6	4297	1150	15 JAN	CURRENT			ITAINED	
1970			4298	SO	15 JAN	532.6	27.7	30488	287	
1970		1105 1	4320	SN	23 JAN	115.0	101.4	1477	1431	
1970	008B	DSCAR 5	4321	AUSTRL		115.0	101.3	1476	1431	
1970	008C		4322	Sn	23 JAN	115.0	101.3	1477	1432	
1970	V600	SERT 2	4327	S	4 FEB	106.0	99.1	1045	1038	
1970	011A	IMOSHD	4330	JAPAN	11 FEB	119.2	31.1	2964	329	
1970		,	4331	Sn	11 FEB	100.8	0.66	844	753	
1970			4332	SO	11 FEB	100.9	98.8	848	755	
1970	021A	NATO 1	4353	NATO	20 MAR	1436-1	11.6	35802	35770	
1970	0218		4324	SO	20 MAR	576.1	26.1	32631	483	
1970	021C		5975	SO	20 MAR	554.2	25.8	31617	326	
1970		NIMBUS 4	4 362	SO		107.1	99.8	1097	1086	
1970	0.258	TOPO 1	4363	Sn		106.9	200	1085	1001	
1970		- 0250F		SO		SEE NOTE	w	25		
1970			4 366	SO		CURRENT		20	TAINED	
1970			4 368	SO		CURRENT		NO	MAINTAINED	
1970		COSMOS 332	4 369	USSR		99.5	4.0	740	732	
1970			4370	USSR		99.5	74.0	736	708	
1970			14814	USSR		0.66		۲.	206	
1970		INTELSAT 3 F-7	4376	I T S0		CURRENT			MAINTAINED	
1970	0328		4377	Sn		CURRENT		NOT MAINTAINED	TAINED	
1970	0 34 A	MAO 1	4382	PRC		112.0	68.4	2209	431	
1970	0.348		4392	PRC	-	103.4	4.89	1427	414	
1970	0.36A	COSMOS 336	4 383	USSR		115.4	74.0	1484	1461	
1970	C 36B	COSMOS 337	4384	USSA	25 APR	116.2	74.0	1550	1466	
1970	0 36C	COSMOS 338	4 385	USSR	25 APR	115.8	74.0	1516	1465	
1970	0360	COSMOS 339	4 386	USSR	25 APR	115.0	74.0	1467	1443	

OBJECTS IN ORBIT

INTER-				36 JB	OBJECTS IN ORBIT	81T				
NAT I ONAL	<u> </u> ¥		CATALOG			PERIGO	INCL I -	APOGEE	PERIGEE	TRANSMITTING
DESIGNATION	ATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NATION	X.	KH.	FREG. (MHZ)
1970 L	L AUNCHE	ES (CONT.)								
	036E	COSMOS 340	4387	USSR	25 APR	114.6	74.0	1468	1405	
	036F		4 388	USSR	S	113.9	74.0	1466	1341	
	0366	_	4 389	USSR	25 APR	113.5	74.0	1466	1308	
	0 36H	COSMOS 343	4390	บรรค		114.2	74.0	1466		
	0367	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 391	USSR	25 APR	116.6	74.0	1586	1466	
	0 37A	METEOR	4 393	USSR		4.96	81.2	613	563	
	6378		4364	SSE		97.0		ø	534	
	4040 0		4418	s :		CURRENT		NO	MAINTAINED	
0.00	9000	000	1104	500	-	CURRENT		Š.	MAINTAINED	
	4 4 4 6	AE FOX	A 1 4 4	2000	NO. 52	101.8	21.5	873	817	
	4660	B-3 F TAN TANT	0744	K 00 1 1	7	7.201	2.10	777	2000	
	0.558		4 4 4	200	1 = C	ָ ר			MATATARA	
	062A	SKYNET B	1044	פ פ	-	CORREGIO	EL FMENT		TAINED	
	067A	0	4 507	5 5		106.7	00 - 1		440	
	0.67B		45.15	S (, c	00	1204	740	
970	0670		95.03	S		103.1	1 - 00	200	4	
	0670		5447) <u>-</u>		1001		1436	2 4	
	4090		0.54	50		THEORY		•	TATABLE	
	0.70A		4010	5 5		TOO!			1 A L MC U	
	0708		4513	5 0		8-001	0.00	7 4	745	
	V620	COSMOS 367	4554	USSR		104.5	65.6	101	220	
	083A		4578	USSR		0	74.0	732	729	
1970 0	0.838		4579	USSR		99.5	74.0	727	1117	
	085A	METEOR	4583	USSR	15 OCT	95.1	81.2	523	525	
	0858		4584	USSR		95.5	81.2	598	4.69	
	086A	COSMOS 372	4588	USSR	16 OCT	100.5	74.1	190	770	
	0868		4589	USSR		100.2	74.1	786	753	
1970 0	086C		5357	USSR	16 OCT	98.9	74.0	710	702	
	0860		5358	USSR		9.66	74.0	742	733	
		C05M05 374	4594	USSR	23 OCT		63.0	1690	269	
	- 8680			USSR		SEE NOTE				
		COSMOS 375	4598	USSR	-		62.8	2045	534	
	- 8160	091AX		USSR						
0 0261	4000		05.04	s c		1198.1	ຄໍເ	36095	25881	
	0 0		7000	500		7.761	20.0	36112	00907	
	4001	196 604603	400	2000	י מני	0.40	0.4	1001		
	200		1 0	200		•	0 0	7 6	70%	
	200		1000	2000		7.00		200	000	
' -	1026		8764	0551	2 DEC	104.2	0 4 7	90.6	964	
	026		4070	000		701	0 42	, ,		
	. TO 1	CAF SOMEON	7074	2000	י גע געני		2 4	***	0000	
	100)	007.4	2000			***			
' -	1030		067.4	955		1.00.	7.14		1 200	
	1036		12854	2000			0 10	500c	1016	
	7001	- 4402	*C071	¥555	ייי פריר	•				
	800		707.7	5 5		* * * * * * * * * * * * * * * * * * * *	5.101	1/41	1241	
			4 0	F 9		•	•	0 0		
	9 6		0000	5 (.	, כ נ	1543	1492	
-	t	CO2MUS 303	7	2000	750 ZI	9. *01	•	2	2/6	

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NATIONAL		CATALOG			PERIOD	INCL I -	APOGEE	PERIGEE	TRANSMITTING	
DEST GNATION	NAME		SOURCE	LAUNCH	MINUTES	NATION	ĸ.	X.	FREG. (MHZ)	NOTES
LAUNCHES	s (CONT.)									
1089		008 %	USSR	12 DEC	104.5	74.0	716	963		
1098		4.802	FRANCE	N	97.0	15.0	648	578		
113A	COSMOS 389	4.813	USSR	18 DEC	96.4	81.2	009	572		
1138		4814	USSR	18 DEC	96.8	81.2	651	260		
LAUNCHES	s							-		
4000		4004	Sn	CINKN	95.0	18.0	900	102		44
003A	METEOR	6484	SSS	20 JAN	96.1	81.2	576	563		•
003B		4850	USSR		0.96	81.2	622	506		
003C		18277	USSR		95.4	81.2	588	492		
006A	INTELSAT 4 F-2	4881	OSIT		1457.0	11.1	36275	36113		
9900		4882	os Os		653.5	27.6	36424	711		
4600	NATO 2	4 90 2	NATO	3 FEB	1436.0	12.2	35830	35738		
6600		4903	50	3 FEB	CURRENT	ELEMENT	S NOT MAINTAINED	TA I NED		
0600		5986	SO		CURRENT	ELEMENT	NOT	MAINTAINED		
010A	COSMOS 394	4922	USSR		95.7		5	529		
011A	TANSEI 1	4952	JAPAN	16 FEB	106.1	29.7	1106	996		
9116		5126	JAPAN	16 FEB	104.8	29.7	766	976		
012A		4953	Sn	17 FEB	100.4	98.6	805	746		
0128		4964	SN	17 FEB	100.4	7-86	608	750		
015A	COSMOS 397	4964	USSR	25 FEB	113.2	65.7	2174	574		
0158 -			USSR	S			16≎			164
016A	C0SM05 398	4966	USSR		127.5	51.5	3829	195		
020A	COSMOS 400	2020	USSR	6 0	104.9	65.8	666	286		
0208		5051	USSR		104.7	65.8	1022	040		
0200		5052	USSR		104.9			586		
021A		5053	s :		CURRENT			TAINED		
0218		5054		21 MAR	CURRENT		Ö	MAINTAINED		
024 A	1515 2	2104	CANADA	1 APR	113.5	88.2	1422	1 354		
0.248		9019	ns	1 APR	113.5	88.2	1418	1352		
024C		5360	S	1 APR	113.5	86.3	1420	1357		
025A	COSMOS 402	5105	USSR	1 APR	104.9	65.0	1012	965		
028A	COSMOS 405	2115	USSR	7 APR	97.1	81.2	623	\$19		
0288		5118	USSR	7 APR	97.3	81.2	680	574		
0280		5724	USSR	7 APR	9.96	81.2	298	265		
C31A	METEOR	5142	USSR	17 APR	91.1	81.2	333	320		
0318		5143	USSR	17 APR	95.4	81.2	581	492		
0.35A	COSMOS 407	5174	USSR	23 APR	100.7	74.0	802	776		
0.358		5175	USSR	23 APR	100.5	74.1	802	757		
0.350		5300	USSR	23 APR	8.00	74.0	761	740		
0.350		5301	USSR		100.2	74.0	780	752		
0.38A	COSMOS 409	5180	USSR		109.3	74.0	1209	1174		
200		1816	dssp		100	0-47	1224	02.1		
4050		5204	SD		FI FMF		AVATI ABLE			
(C)		2005	9 1		O PARTICIO		AVATE ABLE			
2		0000								
4 d	COSMOS 411	0120	200	> Y = 1	0.011) · ·	004	6161		
0410	COMMON 412	1176	2 0	7 HAY	1.011	0.0	1033	9/41		
01.50		5212	200	A NA V	115.7	0.47	1505	1472		
C 7 4 C	414 SOMSON	5213	2555	*** ^	115.1	74.0	1041	1425		

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INTER- NATIONAL DESIGNATION	ION NAME	CATALOG NUMBER	SOURCE	LAUNCH	PER10D MINUTES	INCLI-	APOGEE KM.	PERIGEE Km.	THANSMITTING FREO.(MHZ)
1971 LAU	LAUNCHES (CONT.)								
		1					0.410	64.6	
	EXPLORE	5598	SO		355.6	2.6	A 101	3 . 3	
1971 099A	A COSMOS 457	5614	USSR	20 NOV	100.4	74.0	1216	1180	
	Ď	5615	USSR	20 NOV	109.3	74.0	1210	1174	
	4	5678	SD.	14 DEC	ELEME	-	AVAILABLE		
	: oc	5679	Sn		ELEMENTS	NOT	AVAILABLE		
		0 0 4	9 1		STATE IN	TON	AVAILABLE		
	، ب	0000	5 5		OLUGAD 10	2 2	AVATI ABIF		
	٥	1800	2			-			
	ليد	5682	s O				AVAILABLE		
1971 111A	.A COSMOS 465	5683	USSR		104.8	74.0	1005	400	
1971 1118	8	5685	USSR	15 DEC	104.6	74.0	\$ 66	959	
	A COSMOS 468	5705	USSR	17 DEC	100.5	74.0	793	770	
		5707	USSR	17 DEC	100.4	74.0	194	758	
) (5778	8880		100	74.0	770	751	
	۵ ب	9 4	0000		0.001	74.0	764	747	
		0 0	200		9-901	F . 4	4C0AF	35010	
		AD/ C	0001		00000	. 4	1002	020	
	COSMOS	1276	NS S		7.001	0 · ·	1001		
	A OREOL 1	5729	USSR		7 · 7 · ·	0 * 1	9502	A 1	
1971 1198	6	5730	USSR		109.3	73.9	0002	786	
1971 120A	DA METEOR	5731	USSR		102.5	61.3	913	838	
1971 1208	96	5732	USSR	29 DEC	102.1	81.3	875	637	
	20	8826	USSR	29 DEC	101.2	81.2	832	797	
	· a	8827	USSR	29 DEC	102.0	81.3	863	840	
	L C	15344	USSR	29 DEC	100.0	81.3	770	748	
1972 LAI	LAUNCHES								
1972 0034	SA INTELSAT 4 F-4	5775	1150	23 JAN	1442.5	9.0	35936	35886	
		5816	SD	23 JAN	653.3	27.8	36562	688	
	92	5836	USSR		SELEN	SELENOCENTRIC	ORBIT		
	04 CONSON	5846	US SR	25 FEB	104.7	74.0	966	196	
	1000	5867	11558		104.1	74.0	066	945	
) 4	5851	SO)		AVAILABLE		
	± 0	5854	SO	1 MAR	ELEME		AVAILABLE		
	1A COSMOS 476	5852	USSR	1 MAR	93.6	81.2	454	451	
		5853	USSR	1 MAR	0.46	81.2	547	478	
1972 012A	2A PIONEER 10	5860	SN.	3 MAR	SOLAR	SYSTEM	ш	TRAJECTORY	
		5861	SO	3 MAR	HEL I O	HELIOCENTRIC O	ORB11		
1972 018A	84	5903	SN		101-4	686	862	785	
1972 0188	88	5904	SN		101.3	6.86	857	786	
1972 019A	9A COSMOS 480	2065	USSR		100.	83.0	1196	0/11	
1972 0198		2003	USSR		108.9	83.0	1611	1101	
1972 022A	2A METEOR	2017	USSR		102.3	81.2	879	826	
1972 022B	28	5918	USSR	30 MAR	102.5	81.2	918	833	
1972 023E	35	6073	USSR		162.8		6773	219	
1972 029A	9A PROGNOZ	1969	USSR		CURRENT		ELEMENTS NOT MAINTAINED	NTAINED	
		9009	SO		SELEA	SELENOCENTRIC	08811		
1972 03	035A CDSMOS 489	6010	USSR		104.7	74.0	866	096	
		6020	USSR	v	104.5	74.0	986	426	
O Ni	041A INTELSAT 4 F-5	6052	1 T S O		1438.3	o• o	35849	35811	
1972 04	418	6058	Sn	13 JUN	620.9	27.0	36473	528	

OBJECTS IN ORBIT

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TANCITAN					,				
DESIGNATION	JN NAME	NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCL I -	A P O G E E	PERIGEE Km.	FDE C. CMLT
1972 LAUNC	LAUNCHES (CONT.)								
1972 043A	404 ROMROS	0404				ļ			
0		\$ 50 P	2000	ביי היי היי היי היי היי היי היי היי היי	S*001	74.1	789	477	
		6063	8550	23 JUN 23	00.0	74 - 1	786	755	
		6065	USSR	23 JUN	100.0	74.	477	746	
	METEOR	6019	USSR	-	102.7	81.2	80.00	877	
		6080	USSR	30 JUN	102.8	81.2	928	857	
		20348	USSR	30 JUN	102.8	81.2	929	855	
		6117	USSR	20 JUL	3	74.0	1494	1319	
		6119	USSR	20 JUL	•	74.0	1494	1349	
		6119	USSR	20 JUL	114.6	74.0	1493	1381	
		6120	USSR	20 JUL	114.9	74.0	1493	1410	
		6121	USSR	20 JUL	115.3	74.0	1494	1441	
		6122	USSR	20 JUL	115.6	74.0	1496	1671	
		6123	USSR	20 JUL	116.0	74.0	1507	1001	
	COSMOS 511	6124	USSR	20 JUL	116.4	74.0	1543	1603	
		6125	USSR	20 JUL	117.0	74.0	1599	1490	
	LANDSAT 1	6126	SO	23 JUL	103.1	99.5	800	807	
	- 058JL		SO	23 JUL	SEE NO	1	7.0	5	
	COSMOS 514	6148	USSR	16 AUG		83.0	990	080	
		6140	USSR	ø	. 0	83.0	0 0	047	
		6277	USSR	٥	104.1	82.9	936	40	
		S.	USSR	16 AUG	102.8	3	740	8F 89	
	COPERNICUS	_	SO		66*3	35.0	729	719	
		6155	sn	_	6.86	35.0	742	672	
	5 516	6154	USSR	21 AUG	104.5	64.8	1038	906	
	TRIAD GI-1X	-	SO		100.0	0.06	808	713	
2650 2761		019	S O		9.60	0.06	781	702	
	(6250	S		98.4	89.7	726	640	
	CUSMUS 520	6192	USSR		715.1	67.8	36604	3616	
		6302	USSR		706.7		36151		
1972 0734	EXPLURER 47	6197	ns		CURRENT	ELEMENT	S NOT MAINT	NI V	
	CUSMUS 521	959	USSR		104.9	65.8	1005	974	
		6207	asso.		104.7	65.8	1000	963	
		0770	X 0 :		104.9	65.8	1005	973	
		6217	n v	יא מכו	0.00	98.6	668 668	653	
		42.54	ה ט ס		D (0.80	713	869	
		6221	n v	2 OC	7.66	6.80	728	711	
1972 079C		6.B22	5 (0 v	A 1	150	
1972 0790		6823	s o	0	114.7	0 0 0 0 0 0	1.403	1417	
		6824	SO	0	114-6	0.00	1 4 6 4	1441	
	NOAA 2	6235	ns	40	114.9	101-9	1453		
	AMSAT-OSCAR 6	6236	SO		114.9	101.9	1452	1 4 4 5	
		6237	ns		109.2	102.8	146.5	410	
	METEOR	6256	USSR		102.3	81	882	F 150	
		6257	USSR	٥	102.4	81.3	915	832	
		6262	USSR	NOV I	114.1	74.0	1465	1364	
		6264	USSR	NOV I	114.5	74.0	46	1400	
	CDSMGS 530	6265	USSR	NON I	113.7	74.0	1466	1330	
1972 0870		6266	USSR	NOV I	114.7	74.0	1467	1418	

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INTER-		CATALOG			PER 100	INCL I-	APOGEE	PERIGEE	TRANSMITTING	
DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NATION	X Y	K.	FRE Q. (MHZ)	
1972 LAUNCHES	HES (CONT.)									
0.0	CES 50#500	6267	USSR	NOV	113.4	74.0	1466	1297		
1976 0075	CONTROL PAR	8929	8551	>0N	113.6	74.0	1466	1314		
7 10		04040	dSSI	1 NOV	113.9	74.0	1466	1346		
		02.69	95511	AON 1	114.3	74.0	1466	1382		
7/6		6271	מי מי	2	116.6	74.0	1591	1464		
27.6		1170	K 0	2 2	101.2	9.40	84.5	789		
216		6170	2 -		4.101	8 - 80	856	800		
216		0/20	2		1457-2		36276	36119		
	-	9779	AUAUA.		1.701	2.00	1000	1087		
972	NIMBUS 5	6050	A 1				41.41	0001		
1972 0978		9069	50		111.					
1972 101A		6317	SO		CURRENT		5 5			
1972 101B		6318	Sn		CURRENT			MAINIAINEO		
	COSMOS 539	6319	USSR		112.9	74.0	1378	1339		
072		6320	USSR	21 DEC	112.7	74.0	1371	1333		
2.0	. 048 SMCC	6323	USSR	25 DEC	100.5	74.1	792	766		
	,	4284	8551		100.1	74.1	770	757		
		1300	0000		F -00	74-1	7.33	713		
		7600	200	25 050	00.0	76.1	730	711		
1972 104D		0330	n		3345	•	}	1		
1973 LAUNCHES	HES									
1973 005A	COSMOS 546	6329	asso	26 JAN	95.9			546		
073		6364	USSR	15 FEB	CURRENT			NOT MAINTAINED		
		6380	SO	6 MAR	CURRENT	IT ELEMENTS		NOT MAINTAINED		
	METERD	6392	8550		102.4		881	198		
		F 0 F Y	0551		102.5	81.3	923	934		
	•	7 6			OT IUS	SVSTFM	FSCAPE TRAJECTORY	ECTORY		
	PIONEER II	1240	n u		HEI TO	FNIRIC	DRBIT			
	•	C2 \$ 0	2		4		35058	35876		
	ANIK AZ	10#0	CANADA		0 7 6 7			4		
	METEOR	6659	USSR		102.2	7-19		0 4 8		
1973 0348		0999	USSR		207	2 10		3 OF .		
1973 037A		6675	USSR		114.0	0 • 6	27.51	*601		
	CDSMDS 565	9299	USSR		115.3	0.47	D 0 0 0 0			
1973 037C	COSMOS 566	6677	USSR		115.0	74.0	1841	1431		
1973 037D	COSMOS 567	6678	USSR		114.8	74.0	1481	0141		
1973 037E	COSMOS 568	6299	USSR		114.4	74.0	1478	13/3		
	COSMUS 569	6680	USSR		114.2	74.0	87.41	1300		
1973 0376	COSMOS 570	1899	USSR	2 2 8	113.9	74.0	1479	1 333		
		6682	USSR	8 20 8	113.7	74.0	1478	1316		
		6683	USSR	8 JUN	116.8	74.0	1595	1481		
	EXPLORER 49	6686	Sn	10 CUN	SELEN	SELENDCENTRIC ORBIT	ORBIT			
		6899	Sn	10 JUN	CURRE	CURRENT ELEMENTS NOT	ITS NOT MAI	MAINTAINED		
		6725	O.S	10 CUN	SELEN	SELENOCENTRIC	ORBIT			
		6726	ns	10 CUN	SELEN	u	ORB I T			
		6691	SN	12 JUN	ELEME	ELEMENTS NOT A	AVAILABLE			
		11040	Sn		ELEME		AVAILABLE			
	ACA SOMSON	6707	USSR		105.0		1008	976		
		6708	USSR		104.8	82.9	166	976		
	20 4 20	6747	USSB		HELIO	HEL I OCENTRIC C	ORBIT			
- n 1		4754			ADFOC		ORBIT			
1973 049A	0 244)	2) 		!			

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INTER- NATIONAL DESIGNATION	TION NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ.(MHZ)
1973 LAU	LAUNCHES (CONT.)								
		6769	USSR USSR	5 AUG 9 AUG	AREOCENTRIC HELIOCENTRI	ں ت	RBIT ORBIT		
1973 053D	SD CAPSULE	7224	USSR	9 AUG	HELIOC	HELIOCENTRIC OF	ORBIT	9	
		6788	s S	٠,	101.2	0 00	8.13	792	
	×.	16791	so		CURRENT		Ž	ITAINED	
		6792	ns		CURRENT		NOT	MAINTAINED	
	3A INTELSAT 4 F-7	9629	1150		1452.5	0 • p	36141	36072	
1973 0588	00000	6797	SD.		652.5	27.2	36520	564	
1973 O648	A CUSMUS 585	6825	USSR	80 a	113.5	74.0	1402	1372	
	5A COSMOS 586	6828	USSR		104.7	0 - 6	1001	9661	
		6829	USSR	. 4	104.6	82.9	166	626	
	COSMOS	6845	USSR		115.3	74.0	1491	1446	
	COSMOS	6846	USSR		114.9	74.0	1486	1413	
	COSMOS	2489	USSR	2 OCT	115.1	74.0	1484	1432	
1073 0606		8480	USSR		114.1	74.0	1484	1344	
	COSMOS	0 0 0	3550	2 001	113.9	0.47	1482	1328	
	COSMOS	6851	USSR		•	74.0	7691	1378	
	COSMOS	6852	USSR		114.7	74.0	1484	1396	
	2	6853	USSR	2 OCT	117.1	74.0	1620	1483	
	SA EXPLORER 50	6893	Sn		ELEMEN	ELEMENTS NOT AV.	AIL		
1973 0780	ي د	6895	s c		100.6			340	
	0 7 00000	9689	SO		CURRENT		S	TAINED	
1973 080A	A CUSMUS BUT	2000	2550	29 OCT	5.00 6.00 6.00 6.00 6.00 6.00 6.00 6.00	81.2	471	457	
973	A NNSS 30200	8069	ree.		10.1 10.1 10.1	90.08	510	- w	
		6910	Sn		105.3	6.68	1129	986	
	•	15764	SO		105.8	90.5	1173	892	
	A COSMOS 606	9169	USSR		717.3	68.2	37247	3081	
1973 0840	0	6669	ASS0		706.5		36963	2833	
		6160	n (HELIOC	<u>.</u>	118		
1973 086B	38 - 086HF	0760	s o) NO. V	116.1 SFF NO	102.1 NOTE 1	1508 18#	1400	
		6938	Sn			6.96	1453	1413	
		7559	sn	10 NOV	114.6	96.8	1475	1401	
	1A COSMOS 614	6965	USSR	4 DEC	100.3	74.1	789	755	
	.	9969	USSR		100.2	74 - 1	783	748	
1973 0980	، د	6967	asso.		0.00	74.1	724	969	
	2 4	9569	200	4 DEC	8.66	74.1	764	735	
	Ţ	4604	n u	7 15	0 4 4 4 7	· · · ·	7.00C	20202	
٠-	0	47.60	9 5	7 6	1515.0	* C -	00000 00000	1004	
-	A COSMOS 617	6982	USSR		113.9	74.0	1482	1331	
-	COSMOS	9869	USSR		115.2	74.0	1484	1441	
-	COSMOS	1869	USSR		115.0	74.0	1485	1422	
~	COSMOS	6969	USSR		115.4	74.0	1492	1456	
707	COSMOS		S		114.7		1482	1404	
1973 104	F COSMOS 62	0669	USSR	19 DEC	114.3	74.0	1483	1367	

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	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	NATION	X .	PERIGE KM.	TRANSMITTING FREG.(MHZ)
LAUNCHES (CONT.)								
S	1669	USSR	19 DEC	114.5	74.0	1483	1385	
COSMOS 624	6992	USSR		114.1	74.0	1483	1349	
	6993	USSE		117.0	0.4	0791	1473	
OREOL 2	£001	SSD	26 DEC	104.5	0.47	1555	2000	
	\$007	3205	20 050	0.00	0.4	1161	205	
	6007	200				4.0	246	
CU24U3 827	4000	USSR	29 DEC	104.6	83.0	686	196	
LAUNCHES								
C05M05 628	7094	USSR	17 JAN	104.7	83.0	1007	951	
l !	7095	S	~	104.5	82.9	766	946	
METEOR	7209	USSR		102.0	81.2	880	821	
	7210	JSSR	5 MAR	102.0	81.2	913	792	
4x-x5	7213	ž		100.5	97.8	877	683	
	7228	Sn	9 MAR	100.5	97.8	872	693	
	7218	SO		101.0	0.66	851	761	
	7219	SO	•	101.3	0.66	867	768	
COSMOS 637	7229	USSR		1428.9	11.7	35802	35490	
	11567	USSR		1425.8		35769	35400	
	7244	Sn		ELEME		AVAILABLE		
WESTAR 1	7250	S	13 APR	1441.5	7.4	35904	35878	
	7265	USSR		114.5	74.0	1479	1385	
	7266	2550		113.7	0.47	141	131	
STAN SOMEON	1921	2000	77 V V V V V V V V V V V V V V V V V V	1 * * 1 1	74.0	6/41	1001	
CONTROL OFF	2360	2000		116.4	74.0	1490	7.46.1	
	7270	455F	23 APR	114.7	74.0	1482	1401	
	7271	2550		114.9	74.0	1481	1420	
	7272	USSB		115.1	74.0	1486	1436	
5	7273	USSR		117.0	74.0	1605	1485	
METEOR	7274	USSR	24 APR	102.3	81.2	884	852	
	7275	USSR		102.4	81.2	916	831	
MOLNIYA 2-9	7276	USSR		641.1	62.4	36148	351	
	7373	USSR		710.6	62.8	39822	176	
COSMOS 650	7281	USSR	-	113.4	74.0	1398	1 366	
	7284	USSR		113.2	74.0	1387	1361	
C05M05 651	7291	USSR		103.4	65.0	946	891	
S 0 S	7297	USSR	17 MAY	104.4	64.9	1005	927	
SMS 1	7298	Sn		1460.3		36301	36217	
LUNA 22	7315	USSR		SELEN	U	0RB11		
ATS 6	7318	Sn			11.1	35439	35189	
	7324	SD	30 MAY	1430.5	11.3	35764	35589	
COSMOS 660	7337	USSR		105.2	83.0	1622	384	
	7338	USSR	18 JUN	103.0	83.0	1418	385	
COSMOS 663	7349	USSR	27 JUN	104.7	82.9	666	096	
	7350	USSR	27 JCN	104.5	82.9	986	626	
COSMOS 665	7352	USSR	29 JUN	709.6	61.8	39653	298	

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0528 054A 054C 056A 0560 0 60 A 0.60F 063A 0638 066A 9990 **0**86C A690

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NATIONAL		CATALOG			PERIOD	I NCL I -	APOGEE	PERIGEE	TRANSMITTING
DESI GNATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NATION	I	Ä.	r KE U · I wh Z J
1974 LAUNCHES	ES (CONT.)								
1074 1016		9330	SO	19 DEC	657.5	13.3	36966	369	
470		7596	ussa		438.5	62.0	25389	65	
716	C05M05 700	7593	USSA		104.6	83.0	0	958	
1974 1056		7594	USSR		104.5	82.9	982	926	
1975 LAUNCHES	ĒS								
1975 004A	LANDSAT 2	7615	SN	22 JAN	103.1	98.8	912	006	
1975 0048 -			SO	22 JAN			20¢		
	COSMOS 706	7625	USSR	30 JAN	717.8	67.7	33779	6578	
1975 0070		7629	USSR	30 JAN	716.6	67.5	34392	5903	
1975 0090		7653	USSR	6 FEB	685.8	64.1	38462	304	
1975 01CA	STARLETTE	7645	FRANCE	6 FEB	104-2	8.64	1108	805	
		7647	FRANCE	6 FEB	104.4	49.8	1128	801	
		7.654	FRANCE	6 FEB	103.7	6.64	1070	797	
		7655	FRANCE	6 FEB	103.8	6.64	1076	962	
		7659	FRANCE	6 FEB	103.9	40.8	1601	704	
	SMS 2	1648	SO	6 FEB	1447.1	9.6	36072	35929	•
		20835	SO	6 FE8	1460.7	11.6	36714	35819	
	C05M05 708	7663	USSR		113.5	69.5	1408	1366	
		7655	USSR	12 FEB	113.3	69.2	1397	1362	
	COSMOS 711	7678	8880	28 FEB	115.4	74.0	1491	1459	
1975 0168	COSMOS 712	7679	USSR		114.9	74.0	1487	1409	
1975 016C	COSMOS 713	7680	USSR		114.7	74.0	1485	1393	
1975 016D	C05M05 714	7681	USSR	28 FEB	115.2	74.0	1489	1443	
1975 016E	COSMOS 715	7682	USSR		115.7	74.0	1503	1467	
1975 015F	71	7683	USSR		115.9	74.0	1512	1477	
1975 0166	رى رى	7684	US SR		116.1	74-0	1533	1478	
1975 016H	COSMOS 718	7685	กรรห		115.0	74.0	1487	1241	
		7686	USSB		117.9			7457	
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	ACT SOMEON	35151	05511		104.5	83.0	066	950	
		7577	0550		104-4	83.0	979	950	
		7741	888F		726.6	62.3	40651	139	
	TA 01 4 D 4	7752	A LON I		0.3.5	50.7	452	437	
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	632 SDESO	09//	9880		104-8	83.0	266	696	
ត ម	2	7780	955		717.5	62.8	39922	416	
	AS-I WINDE	7800	US-SR		732.9	63.5	40404	642	
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### BOUNDER SOUGE LAUNCH HINDIES NATION KN. ES (CONT.) COSHOS 703 8287 USSR 17 SEP 116.9 74.0 1508 COSHOS 704 8280 USSR 17 SEP 116.9 74.0 1508 COSHOS 705 8280 USSR 17 SEP 116.9 74.0 1508 COSHOS 706 8280 USSR 17 SEP 116.9 74.0 1508 COSHOS 706 8280 USSR 17 SEP 116.9 74.0 1508 METEOR 8290 USSR 17 SEP 116.9 74.0 1508 METEOR 8290 USSR 17 SEP 116.9 74.0 1508 METEOR 8290 USSR 18 SEP 102.1 81.3 70.1 1008 METEOR 8290 USSR 18 SEP 102.1 81.3 70.1 1008 METEOR 8290 USSR 18 SEP 102.1 81.3 70.1 1008 METEOR 8320 USSR 18 SEP 102.1 81.0 1701 COSHOS 770 8332 USSR 26 SEP 100.2 74.1 79.1 1008 METEOR 9331 USSR 8 0CT 104.9 74.0 77.1 79.1 1008 COSHOS 770 8330 USS 10 CCT 104.9 10.0 100.4 77.1 1008 MULNIYA 3-3 USSR 8 0CT 1140.0 100.4 77.1 100.0 100.4	INTER		00 14140			001030	-I CNI	APOGEE	PERIGEE	TRANSMITTING
Deec COSMOS 763 6289 USSR 17 SEP 115.8 74.0 1508 1508 0860 USSR 17 SEP 116.3 74.0 1508 1508 0860 USSR 18 SEP 102.3 181.3 911 0860 USS	DESIGNATIO		NUMBER	SOURCE	LAUNCH	MINUTES	NATION	K.	K.	FREQ. (MHZ)
0.000 C. COSMOS 76.5 B.2287 USSR 17 SEP 110.0 74.0 156.9 C. COSMOS 76.4 B.2289 USSR 17 SEP 110.0 74.0 156.9 C. COSMOS 76.4 B.2289 USSR 17 SEP 110.0 74.0 169.2 C. COSMOS 76.6 B.2290 USSR 17 SEP 110.0 74.0 169.2 C. COSMOS 76.6 B.2290 USSR 17 SEP 110.0 74.0 169.2 C. COSMOS 76.6 B.2290 USSR 17 SEP 110.0 74.0 169.2 C. COSMOS 76.6 B.2290 USSR 17 SEP 110.0 74.0 169.2 C. COSMOS 76.6 B.2290 USSR 18 SEP 100.2 10.0 11.0 0.0 0.0 0.0 1 UTKE.SAT At F-1 8331 USSR 24 SEP 100.0 1.0 0.0 0.0 1 UTKE.SAT At F-1 8331 USSR 24 SEP 100.0 0.0 0.0 0.0 1 UTKE.SAT At F-1 8331 USSR 24 SEP 100.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	515	S								
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0864) COSMOS 768 8292 USSR 17 SEP 115.5 74.0 1682 10840 08541 COSMOS 770 8225 USSR 18 SEP 102.1 81.3 911 911 0854 0854 0858 17 SEP 115.5 74.0 1682 0854 0854 0858 18 SEP 102.1 81.3 911 105 1050 1150 1150 1150 1150 1150 1			8291	USSR		115.3	74.0	1484	1454	
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087A METEOR 8293 USSR 18 SEP 102.1 81.3 9113 080A COSMOS 770 8225 USSR 24 SEP 102.1 81.3 9113 080A COSMOS 773 822 USSR 24 SEP 102.1 81.0 1106 091A COSMOS 773 8330 USS 26 SEP 106.2 2.3 36.501 091B UNITELSAT 4A F-1 8331 USS 26 SEP 106.2 2.3 36.501 094A COSMOS 773 8343 USSR 30 SEP 100.4 74.1 791 094A USSR 30 SEP 100.4 74.1 77.1 094A USSR 30 SEP 100.4 74.1 77.1 094A USSR 30 SEP 100.4 74.1 77.1 095A USSR 30 SEP 100.4 74.1 77.1 095A USSR 30 SEP 100.4 74.1 77.1 095A USSR 30 SEP 100.4 74.1 77.1 1100A GOES 1 80.50 USSR 30 SEP 100.4 74.1 77.1 1100A GOES 1 80.50 USSR 30 SEP 30.6 0.4 74.1 70.1 100A GOES 1 80.50 USSR 30 SEP 30.6 0.4 74.1 70.1 100A GOES 1 80.50 USSR 30 SEP 30.6 0.4 74.1 70.1 100A GOES 1 80.50 USSR 30 SEP 30.6 0.4 74.1 70.1 100A GOES 1 80.50 USSR 4 NOV 104.6 83.0 90.4 100A GOES 1 80.50 USSR 4 NOV 104.6 83.0 90.4 100B WOLNITY 3-3 84.5 USSR 14 NOV 104.6 83.0 90.0 112E COSMOS 778 84.5 USSR 14 NOV 104.6 83.0 90.0 112E COSMOS 783 84.5 USSR 14 NOV 104.6 83.0 90.0 112E COSMOS 783 84.5 USSR 14 NOV 104.6 83.0 90.0 112E COSMOS 783 84.5 USSR 14 NOV 104.6 83.0 90.0 112E COSMOS 783 84.5 USSR 14 NOV 104.6 83.0 90.0 112E COSMOS 783 84.5 USSR 14 NOV 104.6 83.0 90.0 112E COSMOS 783 84.5 USSR 14 NOV 104.6 93.0 90.0 112E COSMOS 783 84.5 USSR 14 NOV 104.6 93.0 90.0 112E COSMOS 783 84.5 USSR 14 NOV 104.6 93.0 90.0 112E COSMOS 783 84.5 USSR 14 NOV 104.7 74.1 70.0 112E COSMOS 783 84.5 USSR 12 DEC COSMOS 783 80.0 100.2 74.1 70.0 112E COSMOS 783 84.5 USSR 12 DEC COSMOS 783 80.0 100.2 100.2 92.1 100.0 112E COSMOS 783 84.5 USSR 12 DEC COSMOS 783 80.0 100.2 100.0 10			8295	USSR		117.8	74.0	1082	5 C F	
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094C 094C 094C 095R 30 SEP 98.9 74.0 777 74.0 777 094C 094C 094C 095R 30 SEP 98.9 74.0 777 74.0 777 095R 095R 095R 30 SEP 98.9 74.0 777 74.0 777 93.0 994D 097E 11676 935R 8 OCT 1435.7 11.0 35649 90 90 90 90 90 90 90 90 90 90 90 90 90			9344	USSR		100.4	74.1	791	159	
0940 0950 14865 USSR 30 SEP 100.2 74.0 775 0974 COSMOS 775 84157 USSR 8 OCT 1435.7 11.0 35849 0977 1007 100.5 8 OCT 1435.7 11.0 35849 0977 110 0.5 10 OCT 1436.3 10.1 35849 100 0990 110 0.5 10 OCT 1435.0 10.1 35794 100 0FES 1 0.5 10 OCT 1435.0 10.1 35794 100 0FES 1 0.5 10.1 10.4 35794 35794 100 0FES 1 0.0 10.1 10.4 35794 35794 100 0FES 1 0.0 1 10.4 35794 35794 100 0FES 1 0.0 1 10.4 35794 35794 100 0FES 1 0.0 0.0 1			8346	USSR		0.80	74.0	717	969	
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097E 097E 08415 USSR 8 DCT CURRENT ELEMENTS NOT MAINT 0997F 11006 USSR 8 DCT 1433.3 11.0 35942 0997 1100 USSR 10 DCT 1433.3 11.0 35794 100A GDES 1 6419 USSR 10 DCT 1412.7 11.0 35794 100A GDES 1 0.0 10.1 1.35.0 10.1 35794 100A GDES 1 0.0 1.0 1.35.0 999 100A 10.0 0.0 0.0 1.0 1.35.0 999 100A 10.0 0.0 0.0 0.0 0.0 99.0 99.0 100A 0.0 0.0 0.0 0.0 0.0 0.0 99.0 99.0 99.0 99.0 99.0 99.0 99.0 99.0 99.0 99.0 99.0 99.0 99.0 99.0 99.0 99.0 99.0 99.0 99.		COSMOS 775	8357	USSR		1435.7	11.6	35849	35705	
097F TIP 2 8 551 11676 USSR 8 0CT 1438.3 11.0 35942 090A TIP 2 83501 USSR 8 0CT 1438.6 10.1 35942 100C 100C 10 0CT 143.6 10.1 35942 490 100C 20062 US 10 0CT 14412.7 11.0 35939 103A COSMOS 778 8419 USSR 4 NOV 104.6 83.0 993 105A MCLNIYA 3-3 8425 USSR 4 NOV 104.6 83.0 993 112B MCLNIYA 3-3 8425 USSR 14 NOV 73.4 4050 993 112B MCLNIYA 3-3 8458 USSR 28 NOV 100.5 74.1 794 112D 112B 14801 USSR 28 NOV 100.5 74.1 794 1112B 1112B 14801 USSR 28 NOV 100.5 74.1 794		1	8415	USSR		CURRE		S NOT	MAINTAINED	
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100F		ı	8366	50		1435.6	10.1	35794	35759	
100F			8368	Sn		164.8	23.4	4069	253	
10.34 COSMOS 778 8419 USSR			20962	SO		1412.7	11.0	36513	34142	
1056 MOLNIYA 3-3 8421 USSR 4 NOV 104.6 83.0 993 1056 MOLNIYA 3-3 8425 USSR 14 NOV 717.4 62.8 39896 1050 GA62 USSR 14 NOV 717.4 62.8 39896 1120 GA62 USSR 28 NOV 100.5 74.1 794 1120 Handle Han		77	8419	USSR	4	104.8	83.0	666	796	
105A MOLNIYA 3-3 8425 USSR 14 NOV 717-4 62-8 39690 1050 1050 8462 USSR 14 NOV 733-6 63-5 40569 40569 1128 8459 USSR 28 NOV 100-5 74-1 794 1128 1120 14601 USSR 28 NOV 100-5 74-1 794 1120 1120 14601 USSR 28 NOV 100-5 74-1 794 1120 1120 14601 USSR 28 NOV 100-5 74-1 794 1120 112			8421	USSR		104.6	83.0	666	096	
105D		m	8425	USSR	4	717.4	62.8	39896	441	
1126			8462	USSR	4	733.8	63.5	40569	571	
1126		COSMOS 783	8458	USSR		100.7	74.1	900	181	
112C			8459	USSR		100.5	74.1	794	169	
1125			8757	USSR		7.66	74.0	749	742	
112E			14801	USSR		100.5	74.1	790	775	
110			18500	USSR		100.7	74.1	802	778	
17.7 RCA SATCOM 8476 US 13 DEC 1445.8 6.5 36066 18.4 8482 US 14 DEC ELEMENTS NOT AVAILABLE 18.5 US 14 DEC ELEMENTS NOT AVAILABLE 18.5 US US US US US US US U		COSMOS 785	8473	USSR		104.2	65.1	1004	906	
184		BCA SATCOM	8476	Sn		1445.8	6.5	36066	35887	
180			0.698	SD		ELEME	NOT	VAILABLE		
121A WOLNIYA 2-15 8492 USSR 17 DC CURRENT ELEMENTS NOT WAINT LI21A WOLNIYA 2-15 8492 USSR 17 DC CURRENT ELEMENTS NOT WAINT LI21A PROGNOZ 4 8492 USSR 22 DEC CURRENT ELEMENTS NOT MAINT LI23A RADUGA 1 8510 USSR 22 DEC 382.2 46.0 21802 8546 USSR 22 DEC 382.2 46.0 21802 1235 11568 USSR 22 DEC 367.2 46.8 20987 1124A WETEOR 8519 USSR 22 DEC 102.2 81.2 881			41.54	Sn		ELEME	NOT	VAILABLE		
123A MOLNIYA 2-15 8492 USSR 17 DEC 416.9 62.8 24113 122A PROGNOZ 4 8510 USSR 22 DEC CURRENT ELEMENTS NOT MAINT 123A RADUGA 1 8513 USSR 22 DEC ELEMENTS NOT AVAILABLE 1230 8546 USSR 22 DEC 382.2 46.0 21802 123F 123F 22 DEC 367.2 46.8 20987 124A METEOR 8519 USSR 22 DEC 102.2 81.2 881 124B 8520 USSR 25 DEC 102.2 81.2 881 124B 8520 USSR 25 DEC 102.3 81.3 901 LAUNCHE S			8517	50		CURRE	ELEME	NOT	MAINTAINED	
123A RADUGA 1 8510 USSR 22 DEC CURRENT ELEMENTS NOT MAINT 123A RADUGA 1 8513 USSR 22 DEC ELEMENTS NOT AVAILABLE 8546 USSR 22 DEC 382.2 46.0 21802 1235 1235 11568 USSR 22 DEC 367.2 46.8 20987 1235 1258 1258 22 DEC 367.2 46.8 20987 1235 1258 1258 25 DEC 102.2 81.2 881 1248 8520 USSR 25 DEC 102.2 81.2 881 1248 1248 8520 USSR 25 DEC 102.3 81.3 901 1248 1248 1258 1259 1258 1259 1258 1258 1259 1258 1259 1258 1259 1258 1259 1258 1259 1258 1259 1258 1259 1258 1259 1258 1259 1258 1259 1258 1259 1258 1259 1258 1259 1259 1259 1259 1259 1259 1259 1259		٥	8 4 0 2	8550		_		2411	103	
1236 RADUGA I 6513 USSR 22 DEC ELEMENTS NOT AVAILABLE 6546 USSR 22 DEC 382.2 46.0 21802 1236 8546 USSR 22 DEC 367.2 46.8 20987 1235 11569 USSR 22 DEC 1432.7 11.3 35800 124A METEOR 8519 USSR 25 DEC 1432.7 11.3 35800 124B 8520 USSR 25 DEC 102.2 81.2 881 901		1 4	01.54	8880				AM TON	AINED	
1230 1236 1236 1236 1237 1238 1237 1238 1238 1238 1238 1240 1258 1258 1258 1258 1258 1258 1258 1258		DADLIGA	A51.24	USSB		ELEME	S NOT	LABLE		
1235			4	9880		382.2	46.0		334	
1235 11568 USSR 22 DEC 1432-7 11.3 35 1248 METEOR 8519 USSR 25 DEC 102-2 81-2 1248 8520 USSR 25 DEC 102-3 81-3 LAUNCHES			9547	assi.		367.2	46.8	20987	228	
1244 METEOR 1538 25 DEC 102.2 81.2 1248 1248 1248 1248 1248 1259 1058 25 DEC 102.3 81.3 1248 1248 1248 1259 1259 1259 1259 1259 1259 1259 1259						1632.7		0000	45.640	
1248 METEUR 8520 USSR 25 DEC 102.3 81.3 LAUNCHES 003A HELIOS 2 8582 FRG 15 JAN HELIOCENTRIC ORBIT			80011	¥000		143641	C . 1 .	7		
1248 8520 USSR 25 DEC 102.3 81.3 LAUNCHES 003A HELIOS 2 8582 FRG 15 JAN HELIOCENTRIC ORBIT			8519	USSK	ດ	•	7.10	100	600	
LAUNCHES 003A HELIOS 2 8582 FRG 15 JAN HELIOCENTRIC			8520	SS	25 DEC	102.3	•	106	830	
003A HELIOS 2 8582 FRG 15 JAN HELIOCENTRIC		ر ا								
003A HELIOS 2 8582 FRG 15 JAN HELIOCENTRIC										
	1976 003A	HELIOS 2	8582	FRG	15 JAN	HELIO		Reit		

I WITH			087	OBJECTS IN OR	08811				
NATIONAL DESIGNATION	10N NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE Km.	TRANSMITTING FREG. (MHZ)
1976 LAUN	LAUNCHES (CONT.)								
1976 0038	70	8583	S	NAL C	TOTAL TOTAL	(, i		
	I.	8584	s n		MELI DCENTRIC		ORDIT		
_	CTS	8585	CANADA	_	1435.8		35856	35705	
1976 005A	A COSMOS 789	8591	USSR		104.9	83.0	1010	196	
1976 0058		8597	USSR		104.7	83.0	1000	996	
	AUCNITA 1-36	8001	2880	22 JAN	720.2	4.60	39769	705	
	COSMOS	8607	45.50		0.00	0.50	38697	545	
	Ī	8008	8550	NAL AC	114.7	1.5%	4841	1399	
_	COSMOS	8609	USSR		110.1	76.1	000	554	
1976 0080	COSMOS	0198	USSR		115.3	74-1	1602	0441	
	COSMOS	8611	USSR		115.6	74.1	1496	4641	
	COSMOS	8612	USSR	28 JAN	115.8	74-1	1513	1470	
	COSMOS 79	8613	USSR	28 JAN	116.0	74 - 1	1527	1477	
	4 COSMOS 798	8614	USSR	28 JAN	116.3	74.1	1552	1476	
		8615	USSR	28 JAN	117.9	74.0	1692	1481	
	INTELSAT 44 F-2	8620	1150	29 JAN	1444.5	6.5	35968	35932	
	!	8621	SO		654.0	21.2	36572	587	
	COSMOS 800	8645	USSR		105.0	83.0	1001	716	
		8646	USSR		104.8	83.0	686	686	
1976 5144	COSMOS 8	8688	USSR			6.59	574	515	
	HARLONI	8697	SO		1436.1	8.8	35797	35777	
1976 0176		8702	s i		173.4	24.5	7596	546	
	I	607.8	ZADAN		105.1	2.69	1001	986	
		01/8	NAPAU		105.1	2.69	1011	988	
	MUCKITA 1-00	0.741	2000		669.1	9.29	37773	151	
	304307	1146	255		730.6	65.9	40691	594	
		37.10	USSR		105.5	85.9	1652	385	
		8745	USSR			82.9	1414	373	
1076 0238	י רנס מ	8746	S :	<u>د</u>	4	19.3	35830	35739	
	SOI PAD	9 / 0	\$ 0 0	TO MAR	1436.0	10.3	3580	35763	
		8740	S =) K	FINAGOLO			MAINIAINED	
		8751	50	٠,	1646 F			MAINTAINED	
		8752	SO) (C	-	FIFMENTS		05/50	
1976 023H		8753	SO		CURRENT			MATERIAL STATES	
		8832	SD		CURRENT			MAINTAINED	
		13753	So	15 MAR	1420.9	9.1	3552	35456	
	COSMOS 808	8754	USSR	16 MAR		81.2	520	9	
		8755	USSR	16 MAR	95.0	81.3	545	064	
	RCA SATCOM II	8774	SO	26 MAR	1460-1	6.1	36503	36008	
		8 799	USSR	7 APR	102.1	81.3	880	832	
	1	8800	USSR	7 APR	102.2	81.2	934	791	
	NATO III-A	8808	NATO		1436.1	9.6	35792	35779	
		8818	SO		ELEMENTS	NOT	AVAILABLE		
		8819	SO		ELEMENTS	NOT	AVAILABLE		
	-055	8835	s n		ELEMENTS	NOT	AVAILABLE		
	SSU-2	8836	s n		ELEMENTS	NOT	AVAILABLE		
1976 338E		8839	s :		ELEMENTS	NOT	AVAILABLE		
		248	SO	30 APR	ELEMENTS	NOT	AVAILABLE		

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NATIONAL	AL	•	CATALOG	6000	TONI A	MENITES	INCLIA	A P UGE E	XX.	FREG. (MHZ)
DESIGNATION	A I I C	ZAK	S S S S S S S S S S S S S S S S S S S	i K O O O						
1976 L	LAUNCHES	ES (CONT.)								
Š	Ç		8.49.4	SI	30 APR	ELEMENT	S NOT	AVAILABLE		
	9 0) Q) ·	•	ELEMENTS	LON	AVAILABLE		
	100	r i	400) J		FLEMENTS	ON	AVAILABLE		
	1000	5 -055	9020) <u>-</u>		ELEMENTS	NOT	AVAILABLE		
0 420	10 P C		9666	. s		ELEMEN	NOT	AVAILABLE		
	3000	50494	8820) (S	-	225.4	109.9	5946	5837	
			8821	S		102.8	109.6	1507	274	
	0000		8822	o o		225.4	109.9	5945	5836	
	0000		14514	SN		112.2	110.0	2371	281	
	4 1 4 5	MOLNIYA 3-5	8833	USSR		664.3	62.0	37590	66	
	0410	1	9844	USSR	12 MAY	710.5	61.9	39885	111	
	042A	COMSTAR 1	8838	SO		1442.7	6.3	35921	35910	
	0428		88:40	SN	13 MAY	648.5	21.9	36223	653	
	043A	METEOR	8845	USSR		102.1	81.3	986	826	
	0438		8846	USSR	15 MAY	102.3	81.2	506	629	
	047A	P 76-5	8860	SO		105.4	90.66	1046	983	
	0478		8861	ŝn	-	105.5	99.5	1048	686	
	047C		8867	SO		106.3	99.5	1113	000	
	0440		8868	SO		104.6	-	101	937	
	050A		8871	SO		CURRENT		NO	MAINTAINED	
	9050		8872	Sn		CURRENT		ON	MAINTAINED	
	051A	COSMOS 823	8873	USSR	-	104.9	83.0	1003	216	
916	6518		8874	USSR	N		83.0	666	000	
1976	053A	MARISAT 2	8882	SD	-	1436.1	7.9	35800	92766	
	053F		8910	SO	0	490-1	25.2	28127	667	
	054A	COSMOS 825	8889	USSR		114.6	74.0	CR # 1	1393	
	054B	COSMOS 826	8890	USSR		116.2	74.0	2961	1480	
1976	054C	COSMOS 827	8891	USSR		114.9	0.4	1861	7747	
1976	0540		8892	บรรค		115.1	0 · 6 · i	1480		
	054E		8893	USSR	S	115.3	74.0	1488	D + + + + + + + + + + + + + + + + + + +	
	054F	COSMOS 830	8894	USSR		115.5	74.0	1641	000	
1976	0546	COSMOS 831	8895	USSR	Ω.	115.7	74.0	1500	7/47	
1976	054H	COSMOS 832	8896	US 52	ģ.	110.0	0.0	9101		
1976	0541		8897	CSSR		0 · / I		0001		
	059A		8916	s o	26 JUN	ELEMENIS	2 2	AVAILABLE 4VAI: ABI F		
	059C		8178	/ i		CLERENT	- M		NOT MAINTAINED	
	0530	1	8919	50		•			776	
	061A	COSMOS 836	2000	2000	200 60	• • • • • • • • • • • • • • • • • • • •	7.47	F 0.C	770	
	0618		\$ 2 D D	200	200		7.47	247	7.35	
	0610		7.66	200		9 0	74 - 1	762	731	
	0610		14615	א מ מ מ	•	CI FLENTS	1 2	AVATI ARI F	•	
	C 65C	1	8006	5000	, a	16 30 6	2	35882	35827	
	066A	PALAPA 1	6006	AC NON I		0 · F 4 F	* * * * * * * * * * * * * * * * * * * *	19201	25.2	
	0 990		7106	2 .	9 5	1 4 4	0.54	2061	200	
			1106	2000			MOTE	214		
1976	678	- 0078W		K 6	3		65.7	•	E80	
1976	06780		20030	2000	- 0 4	9 00 0	74.0	707	77.1	
1976	¥690	COSMOS 841	2006	2000		5.00	24.5	788	160	
1976	0698		9063	3000	5 5	3 8	74.	750	743	
1976	0690		# 0.0 0.0	۲ ٥ ٥		•	•	i F		

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	TRANSMITTING	FRE Q. (MHZ)																																														
		FREO																																														
	PERIGEE	KW.		768	696	196	35783	548	431	1503		945	040	MAINTAINED	MAINTAINED	429					1	35095	777	770	769	730	743	35779	80 Y C C	800	831	934	1586		35483	1040	959	ITAINED	123	527	1415	1396	1461	1461	1434	1461	1462	10.4
	APOGEE	KH.		806	1006	986	35790	36202	38249	1519	22≎	1008	166	NOT	NOT	487	AVAILABLE	AVAILABLE	AVAILABLE	AVAILABLE	AVAILABLE	3585	797	789	800	761	775	35794	80 d	601	657	982	38734	23¢	36061	41000	200	S	39657	40522	1462	1462	1404	1514	1462	1537	1473)
	INCL I-	NATION		74.1	83.0	83.0	6.2	22.1	62.6	102.0	TE	82.9	82.9			81.1	NOT	2	202	NON	LON S		74.0	74.1	74.0	74.1	74.1	n .	61.0	54.7	64.7	64.9	6.99	w	10.9	0.01	82.9		62.0	62.2	74.0	74.0	74.0	74.0	74.0	74.0	74-0	•
-	PERIOD	MINUTES		100.6	4	104.6	1436-1	0.949	684.1	116.2	SEE NOT	104.6	104.5	CURRENT	U	93.8	ELEMENTS	ELEMENTS	ELEMENTS	ELEMENTS	FLEMENT	1430.1		100.5	100.6	7.66	100.0	1436.1	102.2	10401	101.8	104.2		SEE NOT	1435.4	104.7	104.6	CURRENT	706.2	731.9	114.6	114.4	115.5	115.7	114.8	116.0	115.3	•
		LAUNCH		15 JUL		21 JUL	22 JUL	22 JUL	23 JUL	29 JUL	29 JUL	29 JUL	29 JUL									11 057	_						150 001							20 05			2 DEC						_	7 DEC	_)
		SOURCE		USSR	USSR	USSR	SO	SO	USSR	SO	SO	USSR	USSR	SO	SO	USS 4	s i	s :	s i	s :	50	2001	SSR	USSR	USSR	USSR	USSR	s c	2000	USSR	USSR	USSR	USSR	USSR	USSR	2000	USSR	USSR	USSR	บรรล	บรรล	กรรล	USSR	U.S.S.R	2550	USSR	USSR	í
	CATALOG	NUMBER		13499	9025	7906	2506	9329	6926	2006		1906	6005	9270	9271	0626	9415	6146	9420	4840	9126	17872	2000	7770	14816	14817	18504	94.78	1640	9486	19297	7676	5676	!	6056	9000	9510	9557	9574	6256	9588	6836	9590	9591	9592	9593	9595	0 1
		NAME	S (CONT.)		COSMOS 842		COMSTAR 2			NOAA S	077FR	COSMOS 846					DMSP-F1					7 4 5 5 5 6 4 4	COSMOS 858					MARISAT 3	שביבתא	COSMOS 860		96	COSMOS 862	1056	EKKAN	COSMOS 864		PROGNOZ 5	MOLNIYA 2-16							COSMOS 876		
ER-	NAT I ONAL	DESIGNATION	6 LAUNCHES	0690 9	6 070A	6 070B	6 073A		_												2100							6 101A			-	_	105A		4 10 /A					0911 9	118A	1188	1180	1130	1136	6 118F		
INTER-	¥.	DES	1976	1976	1976	1976	1976	1976	1976	1976	1976	1976	1976	1976	1976	1976	1976	2 7 0	0 10	0/0/	27.0	1976	1976	1976	1976	1976	1976	1976	1076	1976	1976	1976	1976	1976	10.0	1976	1976	1976	1976	1976	1976	1976	1976	1976	9/61	1976	1976	

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OBJECTS IN GRBIT

Nates

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NATIONAL		CATALOG			PERIOD	INCL I -	APOGEE	PERIGEE	TRANSMITTING
DESIGNATION	ON NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NATION	KM.	KM.	FREQ.(MHZ)
1977 LAUN	LAUNCHES (CONT.)								
1977 032A	MOLNIYA 3-7	9941	USSR	28 APR	717.6	63.6	39685	658	
1977 034A		10000	SO	12 MAY	1489.6	10.0	36887	36767	
1977 0348		10001	SO	12 MAY	1509.1	9.5	37372	37033	
1977 034C		10002	sn		1506.9	10.1	38415	35908	
1977 036A	COSMOS 909	10010	USSR	19 MAY	117.0	6.59	2101	992	
1977 0368		1001	USSR		116.9	62.9	2091	988	
1977 G36C		10013	USSR		117.0		2101	066	
1977 038A		10016	SO	m	ELEME	NOT	AVAILABLE		
		10017	ns		ELEMENTS		AVAILABLE		
1977 038C		15422	Sn	23 MAY	ELEME	ELEMENTS NOT A	AVAILABLE		
1977 039A	COSMOS 911	10019	USSR	25 MAY	104.7	82.9	1000	961	
1977 039B		10020	USSR		104.5	82.9	966	8 46	
1977 041A	INTELSAT 44 F-4	10024	1.150	9	1448.2	5.2	36057	35987	
1977 0418		10025	SN	26 MAY	648.2		36274	169	
1977 044A	DMSP-F2	10033	SD		ELEME	NOT	AVAILABLE		
1977 0448		10034	sn		ELEMENTS	NOT	AVAILABLE		
1977 044C		10037	Sn	5 CCN	ELEMENTS	NOT	AVAILABLE		
1977 6440		10085	S O	S JUN	ELEMENTS	NOT	AVAILABLE		
	COSMOS 917	10059	USSR		716.8	9.29	34453	5852	
		10089	USSR		722.4	67.4	35371	5211	
	. GDES 2	10061	SO		1436.1	4.	35795	35777	
		10062	SO		108.5			574	
		10409	S		CURRENT		S	ITAINED	
		20799	S		1431.8	10.1	36638	34767	
		10001	ns n		718.1	64.5	20327	20043	
		10960	s i		314.4	64.4	16888	985	
	MOLNIYA 1-37	10092	USSR		717.7	63.0	39647	701	
		10155	USSR		695.4	63.4	38373	969	
776	COSMOS 921	10095	USSR		97.3	75.8	661	204	
0		10096	assn		6.76	75.8	902	# 100 000	
	METEOR	10113	USSR		7.40	97.4	524	6 4 6 4 6	
116		\$110T	2000	5 .	0 0	0 0	000	# of 0	
AV60 //VI	COSMUS VZ3	10120	2000	<u> </u>	******		2002	107	
		14802	2000	<u> </u>	1001	7.47	287	147	
		14818	8550	5	100.0	74.1	766	747	
	COSMOS 925	10134	USSR	7 JUL	94.6	81.2	509	491	
		10135	USSR	7 JUL	95.3	81.2	561	205	
1977 062A	4 COSMOS 926	10137	USSR	8 JUL.	104.9	82.9	1015	196	
1977 0528		10139	USSR	8 JUL	104.8	82.9	1001	972	
1977 064A	1 COSMOS 928	10141	USSR	13 JUL	104.6	83.0	1003	646	
1977 0648		10142	USSR		104.5	83.0	1000	939	
		10143	JAPAN			8.7	36184	35968	
	- 65GC		SO				264		
	COSMOS 931	10150	USSR		718.8	66.9	35439	7964	
		10167	USSR		710.2	68.2	35235	6474	
		12906	USSR		717.6	67.7	34579	5765	
		12996	USSR		704.4	61.8	5608F	0661	
0.68		14000	USSR		718.6	65.7	30850	3540	
1977 068J	-	19861	USSR	20 JUL	685.7	20.0	38000	759	

			0876	OBJECTS IN ORBI	911				
LATER							4	4	774 A A A A A A A A A A A A A A A A A A
DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NATION	XX.	KA.	FREO. (MHZ)
1977 LAUNCHES	HES (CONT.)								
4170 7701	RADUGA 3	10159	usse	23 JUL	1435.5	10.5	35812	35737	
		11570	USSR	23 JUL	1473.4		36572	36452	
	VOYAGER 2	10271	Sn	_	SOLAR	SYSTEM	ESCAPE TRAJE	TRAJECTORY	
		10272	SO		HEL I O	u			
		10273	SD	-	HEL IO	HEL I OCENTRIC	GRBIT		
1977 079A	COSMOS 939	10282	USSR	24 AUG	114.8	74.0	1460	1429	
1977 0798	COSMOS 940	10286	USSR	24 AUG	114.4	74.0	1460	1391	
1977 079C		10287	USSR		114.6	74.0	1460	1410	
1977 0790		10288	USSR	24 AUG	115.9	74.0	1531	1459	
	COSMOS 943	10289	USSR		115.0	74.0	1460	1448	
	4	10290	USSA		115.2	74.0	1469	1459	
	\$	10291	USSR	24 AUG	115.4	74.0	1489	1459	
1977 079H	96	10292	USSR	24 AUG	115.6	74.0	1509	1459	
1977 0791		10293	USSA	24 AUG	1.17.5	74.0	1675	1460	
1977 080A	SIRIO	10294	ITALY	25 AUG	1436-1	7.1	35865	35706	
1977 0808		10295	ns	25 AUG	115.5	27.1	2082	875	
1977 082A	MOLNIYA 1-38	10315	USSR	30 AUG	682.1	62.6	37830	750	
1977 082E		10369	USSR	30 AUG	634.4	63.9	35919	238	
1977 084A	VOYAGER 1	10321	Sn	5 SEP	HELIO	HEL I OCENTR I C	ORBIT		
1977 0848		10322	Sn	5 SEP	HEL 10	HEL I OCENTRIC	ORBIT		
1977 984C		10323	SO	5 SEP	HELIO	HEL I OCENTRIC	0RB1 T		
1977 087A	COSMOS 951	10352	USSR	13 SEP	104.8	83.0	1012	958	
1977 0878		10355	USSR		104.7	83.0	1006	953	
	COSMOS 952	10358	USSR		104.1	0.49	986	416	
	COSMOS 955	10362	USSR		92.6	81.2	295	546	
		10363	USSR		95.7	81.2	585	523	
1977 C92A	EKRAN	10365	USSR	20 SEP	1435.4	10.5	35904	35640	
		11571	USSR		1421.8	-	35563	35449	
	PROGNOZ 6	10370	USSR	22 SEP	ELEMENTS	NTS NOT	-		
		10425	SO		CURRENT			NTAINED	
	MOLNIYA 3-8	10455	USSR		717.7	63.4	38851	1497	
		10485	USSR	28 OCT	731.6	63.6	39075	1957	
	NNSS 30110	10457	SO		106.8	89.7	1097	1001	
		10462	S		106.8	89.7	1097	1063	
		12858	SO		106.9	89.5	1094	1070	
_	C0SM05 962	10459	USSR	28 OCT	104.8	82.9	1002	962	
		10461	USSR		104.6	82.9	1000	952	
	METEOSAT 1	10489	ES.A	23 NOV	1437.4	7.0	35867	35755	
	ì	10490	SO !		115.5	28.3	2462	164	
	COSMUS 963	10401	2000		2.601	92.9	1205	\$2 TT	
		10492	SSD		109.1	®	1200	1169	
		20001	s :		FLERENIS		AVAILABLE		
		10504	<i>n</i>		FLEMENIS		AVAILABLE		
		10528	S !		ELEMENTS		AVAILABLE		
		10529	SO		ELEMENTS		AVAILABLE		
		10544	O.S	8 DEC	ELEMENTS		AVAILABLE		
		10594	o s	8 DEC	ELEMENTS		AVAILABLE		
		10595	S O		ELEMENTS		AVAILABLE		
-		12959	Sn	_	ELEMENTS	NTS NOT	AVAILABL		
1977 114A		10508	S	11 DEC	CURRENT	NT ELEME	NTS NOT	MA I NT A I NED	

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DESIGNATION	AAL VATION	NAME	NUMBER	SOURCE	LAUNCH	PERIOD	INCLI-	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREG.(MHZ)	NOTES
1977 L	AUNCE	LAUNCHES (CONT.)									
	9.1		4	ij							
	1164	CAR SOMPON	40001	6000	יא ספט	רטאאני.	CICEMENIS	S NUI MAINIAINED	NI A INC.D		
	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	•	10513	2000	13 050	* 40	0 0 W	7 0	0 4		
	116C		10518	2550 2550 2550		9-401	0 0	0 0 0	900		
	1160		10526	USSR		104.8	65.8	1012	926		
1977 1	117A	METEOR 2-3	10514	USSR		102.2	81.2	876	848		
	1178		10515	USSR		102.3	81.2	800	833		
	117C		14950	USSR	14 DEC	102.3	81.2	868	834		
	118A	SAKURA	10516	JAPAN		1455.8	8.1	36195	36148		
	1188		10517	sn		109.6	28.7	1935	484		
	118C		10519	SO		110.0	29.1	1909	545		
	119A	COSMOS 968	10520	USSR	16 DEC	100.5	74.0	794	767		
	1198		10521	USSR		100.3	74.0	787	754		
	119C		10524	USSR		100.2	74.0	781	753		
	1190		10525	USSR		100.2	74.0	784	754		
_	119€		18512	JSSR		100.0	74.0	767	753		
_	121A	COSMOS 970	10531	USSR		105.9	62.9	1146	928		
1977 1	- 8121	1218Y		USSR	21 DEC	SEE NO		27≎			274
	1218W		20032	USSR	21 DEC	108.8	62.4	1769	574		
_	122A	COSMOS 971	10536	USSR	23 DEC	104.9	82.9	1004	971		
1977 1	1228		10537	USSR	23 DEC	104.7	82.9	995	996		
1977 1	123A	COSMOS 972	10539	USSR	27 DEC	103.7	75.8	1159	710		
1977 1	1238		10541	USSR	27 DEC	103.7	75.8	1156	710		
1978 L	LAUNCHES	ĒS									
1978 0	002A	INTELSAT 4A F-3	10557	1150	NAL 7	1441.3	4.7	35001	35876		
	002B		10722	Sn	NAL 71	650.3	21.5	36325	940		
	₩ 400	COSMOS 975	10561	USSR	NAL	0.00	2 1 10		9 46 16 16		
	0048	,	10582	nsse.		0.00	81.2		4		
	005A	COSMOS 976	10581	SSSD		115.1	74.0	1462	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
	0058		10584	USSR		114.4	74.0	1461	1398		
1978 0	005C		10585	USSR		114.6	74.0	1461	1416		
1978 0	0000		10586	USSR		114.8	74.0	1461	1435		
	005E	COSMOS 980	10587	USSR		115.3	74.0	1472	1462		
	005F	COSMOS 981	10588	USSR		115.5	74.0	1493	1462		
	005G		10589	USSR	10 JAN	115.7	74.0	1513	1462		
	005H	COSMOS 983	10590	USSR		116.0	74.0	1535	1462		
	0053		10201	USSR		117.7	74.0	1691	1461		
	007A	COSMOS 985	10599	USSR		104.6	82.9	1016	938		
	6200		10600	USSR	~	104.5	82.9	1008	934		
	3600		10802	USSR	4	616.5	63.5	35145	87		
	012A	IUE	10637	SO		1436.4	32.6	41791	29794		
	012C		10723	Sn	o	578.5	29.0	33019	519		
	014A	KYOKKO	10664	JAPAN	4 FEB	134.0	65.4	3960	635		
	014C		12329	JAPAN	4 FEB	133.8	65.3	3939	637		
	0140		12330	JAPAN	4 FEB	134.0	65.4	3964	630		
	014E		12331	JAPAN	4 FEB	132.7	64.8	3854	628		
	014F		12406	JAPAN	4 FEB	133.3	62.9	3885	642		
1978 0	016A	FLTSATCOM 1	10669	SO	9 FEB	1436.0	8	35802	35766		

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1978 LAUN	LAUNCHES (CONT.)								
1978 0160		12908	ns	9 FEB	211.9	26.4	10525	262	
978	UNE 2	10674	JAPAN	L.	107.2	4.69	1217	973	
1978 0185		10675	JAPAN	16 FEB	107.1	4.69	1212	973	
1978 018C	,	13132	JAPAN		107.9	69.5	1287	116	
1978 019A	A COSMOS 990	10676	USSR	17 FE8	100.5	74.0	793	768	
1978 0198		10677	USSR		100.3	74.0	784	160	
1978 0190		14803	USSR		9.66	74.1	746	736	
1974 0190		13500	USSR	17 FEB	100.2	74.1	781	758	
1978 0195		18501	USSR	17 FEB	100.3	74.1	785	759	
1978 020A	م	10684	sn		718.0	63.8	20212	19852	
		10801	O.S	22 FEB	268.4	0.49	14061	747	
		10688	o.s	25 FEB	CURRENT	EL EMENT	NOT	NTAINED	
1978 0218	<i>e</i>	10689	SD	25 FEB	CURRENT	T ELEMENTS	NOT	MAINTAINED	
	A COSMOS 991	10692	USSR		104.6	83.0	1004	950	
		10693	USSR	28 FEB	104.6	83.0	066	756	
	MOLNIYA 1-39	10696	USSR	2 MAR	717.5	61.9	39760	578	
1978 0240		10803	USSR		729.1	62.2	40171	738	
	A LANDSAT 3	10702	SO		103.1	98.8	917	895	
	AMSAT-08	10703	SO		103.0	99.1	*06	895	
	- 026HT	•	5				28≎		
		20029	5			98.6	677	759	
	A COSMOS 994	10731	USSR		104.9	82.9	1004	972	
		10732	USSR		104.7	82.9	966	196	
		10734	SO		ELEMENTS	ITS NOT AVAL	AILABLE		
	A COSMOS 996	10744	USSR		104.6	32.9	1003	950	
		10745	USSR		104.5	82.9	966	945	
	A COSMOS 1000	10776	USSR		104.7	82.9	1006	926	
		10777	USSR	31 MAR	104.6	82.9	€66	955	
	A INTELSAT 4A F-6	10778	ITSO		1437.0	4.7	35817	35789	
		10779	SO	_	648.1	21.2		673	
1978 038A	4	10787	SO	7 APR	CURRENT		NOT	NOT MAINTAINED	
	s	10788	SO	7 APR	CURRENT	IT ELEMENTS	NOT	MAINTAINED	
	A YURI	10792	NAPAN		1435.5	6.9	35800	35749	
1978 039B	an an	10793	SN	7 APR	111.0	28.2	1975	572	
1978 0390	U	10794	SN	7 APR	215.4	56.9	10819	558	
1978 042A	•	10820	S	1 MAY	100.9	98.6	908	792	
1978 0428	œ.	10853	SO	1 MAY	97.3	98.3	631	625	
1978 042C	U	10854	Sn	1 MAY	97.8	98.3	657	640	
1978 044A	A 015-2	10855	ESA		1436.0	6.8	35798	35776	
1978 0448	8	10856	SN		139.9	28.0	3528	1571	
1978 C44C	U	10857	SO		CURRENT	IT ELEMENT	S NOT MA	INTAINED	
1978 045A	A COSMOS 1005	10860	USSR	12 MAY	95.6	81.2	553	539	
1978 0458		10861	USSR	12 MAY	96.4	81.2	613	554	
	4	10893	SO		718.1	64.3	20634	19733	
1978 0478	æ.	10894	SO	13 MAY	286.5	64.2	15186	851	
	A PIONEER VENUS	1001	SO	0	ELEMENTS	NOT	AVAILABLE		
,) •		i I				
1978 0518		10912	SO	20 MAY	HELIO	HELIOCENTRIC ORBI	1181		
976	A COSMOS 1011	10917	USSR	m	104.7	82.9	1009	952	
		10918	USSR	23 MAY	104.6	82.9	866	156	

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T ELEMEN	TS NOT A	63.8	64.1	67.3	0.99	0.49	0.49	63.7	
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1978 LAUNCHES	(ES (CONT.)								
1978 086A	VENERA 12	11025	USSR	14 SEP	HELI OC	ENTRIC	0R81T		
0	JIK I • KEN	11027	JAPAN	0	92	31.2	22483	257	
_	•	11028	NAGAL		356.9	11.0	80007		
		71045	355		* • • • • • • • • • • • • • • • • • • •	0.0	A	1400	
		11044	USSE		┥.	0 · i	9 6	0041	
	COSMOS 1036	11045	3000	700	1.011	0.4		1450	
			2 0 0		• •		004	1674	
		11040	200		0.017		104	964	
		11048	USSR	100	110.3	2	2001	0/67	
	2	11049	2000	- TOO -	0.011		0201	7.61	
	COSMOS 1041	11050	USSR		8.611	3	9061	0/47	
		11051	2880	4 OCT	6 * 2 1 1	2	1001	1480	
1978 093A		11054	SO		717.9	63.8	20342	20020	
1978 0938		11078	SO	7 OCT	160.4	65.0	2499	162	
1978 094A	COSMOS 1043	11055	USSR	10 OCT	95.1	81.2	529	519	
1978 0948		11056	USSR	10 OCT	95.7	81.2	585	519	
1978 095A	MOLNIYA 3-10	11057	USSR	13 OCT	717.5	63.1	38834	1505	
1978 095E		11079	USSR	13 OCT	734.2	63.1	39623	1538	
	TIROS-N	11060	SO		101.7	98.8	848	832	
		11061	ns	13 OCT	100.6	98.86	787	783	
		110.62	SO		100.5	98.86	786	781	
1978 098A	NIMBUS 7	11080	Sn	24 OCT	104.0	99.1	955	945	
	CAMEO	11081	SN		104.0	99.5	968	925	
1978 100A	COSMOS 1045	11084	USSR	26 OCT	120.3	82.5	1702	1683	
1978 1008	RADIO 1	11085	USSR	26 OCT	120.3	•	1704	1683	
1978 100C	RADIO 2	11086	USSR		120.3	82.5	1703	1683	
-		11087	USSR			82.5	1698	1684	
1000			USSR				29¢		
1978 105A	COSMOS 1048	11111	USSR		100.6	74.0	801	111	
1978 1058		11112	USSR		100.5	74.0	808	752	
1978 105C		11113	USSR	16 NOV	100.2	74.0	*11	757	
1978 1050		11114	USSR		100.0	74.0	765	747	
1978 106A		11115	NATO	19 NOV	1436.2	£.5	35610	35766	
1978 109A		11128	USSR	5 DEC	114.6	74.0	1484	1392	
1978 1098	COSMOS 1052	11129	USSR	5 DEC	114.8	74.0	1486	1408	
1978 109C	COSMOS 1053	11130	USSR		115.0	74.0	1485	1428	
1978 1090	COSMOS 1054	11131	USSR		115.2	74.0	1486	1445	
1978 109E	COSMOS 1055	11132	USSR		115.5	74.0	1488	1463	
1978 109F		11133	USSR	5 DEC	115.7	74.0	1502	1470	
1978 1096	COSMOS 1057	-	USSR		115.9	74.0	1514	1478	
1978 109H	COSMOS 1058	11135	USSR		116.1	74.0	1536	1477	
1978 1093		11136	USSR	5 DEC	118.1	74.0	1698	1490	
1978 112A		111141	SO	11 DEC	718.0	63.8	20339	2002	
1978 1128		11142	SO	11 DEC	269.7	63.6	14348	548	
1978 113A		11144	SN	14 DEC	1436.3	7.4	35822	35759	
		11145	sn	14 DEC	1436.0	7.3	35874	35696	
1978 1130		11147	SO	14 DEC	1339.2	9.6	35596	32137	
1978 116A	ANIK BI	11153	CANADA	16 DEC	1442.6	4 - 1	35952	35876	
1978 117A	COSMOS 1063	11155	USSR	19 DEC	95.8	81.2	260	222	
		11156	USSR	19 DEC	6.56	81.2	598	523	

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ES (CONT.) GORIZONT 1 1115 COSMOS 1066 1116 COSMOS 1067 11128 MOLNIYA 3-11 11126 COSMOS 1072 11128 MOLNIYA 3-11 11126 COSMOS 1077 11128 NETEOR 1-29 11128 NETEOR 1-29 11128 NETEOR 1-29 11128 NETEOR 1-29 11128 COSMOS 1077 1128 NETEOR 2-4 11128 NETEOR 2-4 11128 COSMOS 1081 1129 COSMOS 1084 1129 COSMOS 1084 1129 COSMOS 1084 1129 COSMOS 1086 1130 COSMOS 1086 1130 COSMOS 1086 1130 COSMOS 1089 1130 COSMOS 1089 1130 COSMOS 1089 1132 COSMOS 1089 11330 COSMOS 1089 11330 COSMOS 1089 11330 COSMOS 1089 11332										
COMPLIANCE 11156 USSR 19 DEC 1435.6 19.8 49096 11926 USSR 23 DEC 101.9 119.6 49035 119.6 USSR 23 DEC 101.9 119.6 119.6 119.6 119.6 USSR 23 DEC 101.9 119.6 119.6 119.6 USSR 23 DEC 101.9 119.6 119.6 USSR 24 DEC 101.9 119.6 119.6 119.6 USSR 119.6 USSR 119.6 USSR 119.6 USSR 119.6 USSR	INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE		RIOD	INCLI- NATION	APOGEE KM.	PERIGEE Km.	TRANSMITTING FREG.(MHZ)
COSMOS 1067 1 11156 USSR 10 DEC 1437.6 19.6 40055 COSMOS 1067 11166 USSR 23 DEC 101.0 81.2 900 11167 USSR 25 DEC 101.0 81.2 900 11170 USSR 25 DEC 101.0 81.2 900 11170 USSR 25 DEC 101.0 81.2 900 11171 USSR 25 DEC 100.0 81.0 11104 11171 USSR 25 DEC 100.0 81.0 1104 11171 USSR 25 DEC 100.0 81.0 1104 11171 USSR 25 DEC 100.0 81.0 100.0 8	- AUNCHE									
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SCATHA 1255 USSR 25 JAN 96.5 97.6 621	040		11553	USSR	80	732.9	64.2	38967	2132	
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11299 USSR	21A	2	α (USSR		102.1	81.2	873	838	
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COSMOS 1086 11301 USSR 15 MAR 115.4 74.0 1480 11 COSMOS 1087 11302 USSR 15 MAR 116.8 74.0 1521 11 COSMOS 1088 11303 USSR 15 MAR 116.1 74.0 1568 11 11304 USSR 15 MAR 116.1 74.0 1584 11 11306 USSR 21 MAR 104.7 83.0 997 COSMOS 1091 11320 USSR 21 MAR 104.6 82.9 1005 COSMOS 1092 11321 USSR 7 APR 104.6 82.9 1001 COSMOS 1092 11320 USSR 11 APR 104.7 83.0 990 COSMOS 1092 11324 USSR 11 APR 104.7 83.0 990 MOLNIYA 1-43 11328 USSR 12 APR 104.4 63.7 1460	24E	-	11300	USSR		115.6	74.0	1201	1464	
COSMOS 1087 11302 USSR 15 MAR 115.8 74.0 1521 14 COSMOS 1088 11303 USSR 15 MAR 116.1 74.0 1544 14 11304 USSR 15 MAR 117.6 74.0 1688 14 11306 USSR 21 MAR 104.7 83.0 997 99 COSMOS 1091 11320 USSR 21 MAR 104.8 82.9 1005 99 COSMOS 1092 11320 USSR 7 APR 104.6 82.9 1001 99 COSMOS 1092 11326 USSR 11 APR 104.7 82.9 1001 99 COSMOS 1092 11326 USSR 11 APR 104.7 82.9 1001 99 MOLNIYA 1-43 11328 USSR 12 APR 104.6 83.0 996	24F	~	11301	USSR	Ω.	115.4	74.0	1480	1463	
COSMOS 1088 11303 USSR 15 MAR 116.1 74.0 1544 14 11304 USSR 15 MAR 117.6 74.0 1688 14 11306 USSR 15 MAR 104.7 83.0 997 9 11309 USSR 21 MAR 104.8 82.9 1005 COSMOS 1091 11320 USSR 7 APR 104.8 82.9 1005 COSMOS 1092 11326 USSR 11 APR 104.6 83.0 996 9 COSMOS 1092 11326 USSR 11 APR 104.7 82.9 1001 9 MOLNIYA 1-43 11328 USSR 12 APR 104.6 83.0 996	246	_	11302	USSR		115.8	74.0	1521	1464	
11304 USSR 15 MAR 117.6 74.0 1688 14 11306 US 16 MAR ELEMENTS NOT AVAILABLE COSMOS 1089 11308 USSR 21 MAR 104.7 83.0 989 9 COSMOS 1091 11320 USSR 7 APR 104.8 82.9 1005 COSMOS 1092 11326 USSR 11 APR 104.7 82.9 1001 9 COSMOS 1092 11326 USSR 11 APR 104.7 82.9 1001 9 MOLNIYA 1-43 11328 USSR 12 APR 104.6 83.0 996 9	H42	~	11303	2880	o i	116.1	74.0	1544	1464	
COSMOS 1089 11308 USSR 21 MAR 104.7 83.0 997 997 11308 USSR 21 MAR 104.6 83.0 989 997 11312 USSR 7 APR 104.6 82.9 1005 997 997 997 998 998 999 998 999 998 999 999	256		11.504	X 0 :	0 4	- 5		- :	n	
COSMOS 1091 11320 USSR 21 MAR 104.6 83.0 989 99 11320 USSR 21 MAR 104.6 83.0 989 99 11321 USSR 7 APR 104.8 82.9 1005 99 99 11321 USSR 7 APR 104.6 82.9 990 99 11326 USSR 11 APR 104.7 82.9 1001 99 906 99 11327 USSR 11 APR 104.7 82.9 1001 99 906 906	26.2			50		ביר היים		1	440	
COSMOS 1091 11320 USSR 7 APR 104.8 62.9 1005 99 11321 USSR 7 APR 104.6 62.9 990 99 11321 USSR 11 APR 104.6 82.9 1001 99 11327 USSR 11 APR 104.6 83.0 996 99 11327 USSR 11 APR 104.6 83.0 996 99 11328 USSR 11 APR 104.6 83.0	265		11400	4550		401		000	0 40	
COSMOS 1092 11321 USSR 7 APR 104.6 62.9 990 990 11321 USSR 11 APR 104.6 82.9 1001 990 11327 USSR 11 APR 104.6 83.0 996 996 996 996 996 996 996 996 996 99	28A	S	11320	esso		90.401	20.04		100	
COSMOS 1092 11326 USSR 11 APR 104.7 82.9 1001 9 11327 USSR 11 APR 104.6 83.0 996 9 MOLNIYA 1-43 11328 USSR 12 APR 100.4 63.7 1460	288	,	11321	USSR		104.6	95.6		496	
11327 USSR 11 APR 104.6 83.0 996 9 MOLNIYA 1-43 11328 USSR 12 APR 100.4 63.7 1460	30A		11326	USSR	_	104.7	82.9		096	
MOLNIYA 1-43 11328 USSR 12 APR 100.4 63.7 1460	306		11327	USSR	_	104.6	83.0	966	926	
	31A	MOLNIYA 1-43	11328	USSR	N	100.4	63.7	*	0	

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PER 100 MINUTES	INCL I-	APGGEE KM.	PERIGEE KM•	TRANSMITTING FREG.(MMZ)
1979 LAUNCHES	(ES (CONT.)								
1979 032A	COSMOS 1093	11331	USSR		95.4	81.2	545	535	
		11332	บรรผ			81.2	615	535	
	RADUGA 5	11343	2000	25 APR	1435.8	9 4	35790	35771	
1979 0384	FITSATCOM 2	11353	X 50		1436.1	9 - 2	35825	35748	
	0	11378	USSR	-	104.7	82.9	1005	953	
		11379	USSR		104.6	82.9	686	656	
	MOLNIYA 3-12	11384	USSR		411.5	63.1	23748	147	
		11389	S O	•	ELEMENTS	NOT	AVAILABLE		
		11403	SO	-	ELEMENTS	NO.	AVAILABLE		
		11408	S D		ELEMENTS	NOT	AVAILABLE		
		11410	s :		ELEMENTS	Z I	AVAILABLE		
		11534	s :	NOC 9	FLEMENIS	100	AVAILABLE		
1979 053A		11597	n v		CLUMBER S		AVALLABLE		
		20.450	n u		CLEMEN 13		AVA11.ABLE		
1979 0530	V 4402	11415	n u		100.8	2 6	Andere	700	
		01411	2 -	-	9	9 4	747	1 42	
		11634	s S		9.66	D 00	747	738	
	CDSMDS 1109	11417	USSR		CURRENT		S NOT MAI	NTAINED	
		11555	USSR		721.7		38217	2329	
1979 U58E		12833	USSR	27 JUN	715.0	67.3	37920	2294	
		12834	USSR		718.9	67.9	35270	5141	
		12909	USSR		719.6	68.2	39114	1329	
		12995	USSR	•	698.0	66.3	38251	1169	
		13960	USSR	-	720.5	67.3	37953	2534	
	COSMOS 1110	11425	488D	-	100.7	74.0	799	977	
		72411	200		100.0	0.47	0 1	607	
1979 0500		16786	2000	NOT 97		14.1	16/	0 7 6	
	G TND L ZONT	11440	2000 T		4.001	2	15,807	201 25778	
		14005	0.5.8.D	-	1474.4	4.0	36556	36509	
	COSMOS 1116	11457	USSR		94.6	81.2	513	984	
1979 6678		11458	USSR		95.5	81.2	575	515	
	MOLNIYA 1-44	11474	USSR		717.7	63.9	38261	2088	
		11556	USSR		733.1	64.1	38653	2425	
	n .	11484	s i		1440.9	2.8	35886	35874	
	COSMOS 1124	11509	SSS		716.5	68.0	35421	4868	
		11550	2000	28 AUG	723.8	0.89	35861	4789	
1979 C77E		12815	455D		7.08.7	0 0	0000	7400	
		12816	8550		686.5	63.6	36895	1004	
		12817	USSR	o o	720.6	63.3	37929	2564	
1979 078A	COSMOS 1125	11510	USSR	80	100.7	74.0	799	780	
1979 0788		11511	USSR		100.5	74.0	793	177	
		14805	USSR		966	74.1	754	744	
		14806	USSR	@	100.7	74.0	703	786	
		18650	assn	6 0 i	66	74.1	749	740	
		11538	US SR	25 SEP	114.6	74.0	1478	1 395	
1979 0648	COSMOS 1131	11539	USSR	25 SEP	114.8	0.47	1480	0041	

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NATER	7		CATALOG			PERIOD	I NCL I -	APOGEE	PERIGEE	TRANSMITTING
DESIGNATION	ATTON	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NATION	K.	K K	FREG.(MHZ)
1979 LA	L AUNCHE S	(CONT.)								
1979 08	0840	COSMOS 1132	11540	USSR	25 SEP	114.9	74.0	1479	1424	
			11541	USSR	25 SEP	115.1	74.0	1480	1437	
			11542	USSR	S	115.3	74.0	1481	1452	
1979 08	084F C		11543	USSR	ζ,	115.4	74.0	1490	1459	
1979 08		COSMOS 1136	11544	USSR	ø	115.6	74.0	1495	1469	
1979 08	O 84H	COSMOS 1137	-	USSR		115.8	74.0	1513	1470	
	F 780		-	บรรR	S)	117.8	74.0	1682	1480	
1979 08	0864		11558	SO		ELEMENT	PON	'AILABLE		
1979 08	086C		11560	sn			- 0 2	AVAILABLE		
	087A E	EKRAN 4	-	USSR	3 OCT	1436.0	Е3	35853	35716	
1979 08	087C		17939	USSR	3 001	1433.3	6°3	35861	35601	
1979 08	0894	COSMOS 1140	11573	USSR		100.4	74.1	790	767	
1979 08	8680		11574	USSR		100.3	74.1	782	759	
1979 08	0.89C		14807	USSR	11 OCT	8*66	74.1	752	741	
1979 08	0880		14345	USSR		100.2	74.0	781	757	
1979 08	089E		19048	USSR	11 OCT	100.3	74.0	787	759	
1979 05	090A	COSMOS 1141	11585	USSR	16 OCT	104.6	82.9	166	952	
1979 05	9060		11586	USSR	16 OCT	104.4	85.9	686	948	
1979 09	2060		11587	USSR		102.9	85.9	916	876	
		MOLNIYA 1-45	11589	USSR	20 OCT	717.6	62.8	39849	495	
1979 05	0910		11602	USSR		732.0	63.1	40593	461	
1979 05	093A C	COSMOS 1143	11600	USSR		0.96	81.2	929	260	
1979 05	0938		11601	USSR		96.3	81.2	611	247	
1979 09	095A N	METEOR 2-5	11605	USSR	31 OCT	102.4	81.2	616	864	
1979 09	095B		11608	USSR		102.5	81.2	914	835	
1979 09	098A		11621	Sn		1436-1	6.9	35794	35780	
1979 05	0988		11622	SN	21 NOV	1450.9	6.9	36087	36065	
	0 98 C		11623	0.5	21 NOV	1510.8	8.2	38514	35958	
1979 05) V660	COSMOS 1145	11629	USSR	27 NOV	95.6	81.2	551	244	
1979 05	8660		11630	USSR	27 NOV	96.1	81.2	608	531	
		RCA SATCOM III	11635	SO	7 DEC	789.0	8.8	35664	8145	
		ZONT 3	11648	USSR	28 DEC	1435.9	8.8	35798	35766	
			69	USSR	æ	459.	•	36301	36173	
1980 L/	LAUNCHES	v								
1980 00		MOLNIYA 1-46	11662	USSR	_	717.5	63.9	39852	486	
1980 00	002F		11670	USSR	11 JAN	732.7	64.2	40266	822	
1980 00	003A C	COSMOS 1150	11667	USSR		104.8	83.0	101	963	
1980 00	0038		11668	USSR		104.7	85.9	966	496	
1980 00	004A F	FLTSATCOM 3	11669	SO	60	1436.2	6.8	35891	35683	
1980 00	005A (COSMOS 1151	11671	USSR	23 JAN	7.96	82.5	615	589	
	0058		11672	USSR		97.3	82.5	641	614	
1980 00	007A	COSMOS 1153	11680	USSR		104.8	82.9	1015	958	
1980 00	007d		11681	USSR		104.7	85.9	1008	954	
1980 0	008A (COSMOS 1154	11682	USSR		96.2	81.2	629	574	
1980 00	0088		11683	USSR		4.96		929	546	
1980	011A		11690	SO		718.0	•	20503	19862	
	0118		11705	SO	9 FEB	ċ	٠	15711	5	
		COSMOS 1156	11691	บรรล	11 FEB	114.5	74.0	1472	1396	

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INTER			96 76	OBJECTS IN ORBIT	917				
NATIONAL	L	CATALOG			PERIOD	INCLI	APOGEE	PERIGEE	TRANSMITTING
DESIGNATION	TION NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NAT I ON	KN.	K.	FREG. (MHZ)
1983 LA	LAUNCHES (CONT.)								
1980 01	COSMOS	11692	USSR	11 FEB	114.8	74.0	1475	1412	
	COSMOS	11693	USSR		115.0	74.0	1475	1431	
	COSMOS	-	USSR		15.	74.0	1477	1448	
	COSMOS	~	USSR		15.	74.0	1480	1464	
	COSMOS	_	USSR		S	74.0	1499	1466	
		11697	USSR		115.8	74.0	1516	1470	
	COMMOS		2000		116.1	74.0	1541	1469	
	0.00	┥.	USSE.		117	24.0	1693	1466	
0001	CLOA KADUGA O	80/11	2880			0.0	35786	35749	
	O TOO	11.728	200	20 FEB	14791	η . Δ .	36675	7	
		11.718	MAGAL		7.445		V0000	56/26	
	019A	11,720	Sn		<u> </u>	102	3 184 ITAV	1	
	019B	11721	873		FI FIRENT	7	AVATIABLE		
	10 CO	11731	1 0				AVA1-401-5		
	00100	4 -	n v	K Q			AVA! LABLE		
	0196	-	Sn				AVAT. 401 F		
	019F	-	s n		T NUMBER OF	L CN	AVATIABLE		
	0196	11745	SD		FIRMENTS	102	AVAIL ABLE		
	H610	11746	s o	3 MAR	FLEMENT	200	AVAILABLE		
	022A COSMOS 1168	-	USSR		104.7	82.9	1000	9.50	
	0.228	11736	USSR		104.6		1002	95.0	
80	022C	12404	USSR		103.5	82.9	945	902	
	026A COSMOS 1171	11750	USSR		104.8	65.8	1005	965	
	0268	11751	USSR	3 APR	104.6	65.8	666	196	
80		11752	USSR		104.8	65.8	1003	963	
	028A COSMOS 1172	11758	USSR		718.6	0.99	37732	2660	
		11762	USSR		722.1	9.99	38257	2308	
	_	11765	USSR	18 APR	103.6	66.1	1484	373	
	0308 - 030AY		USSR	18 APR		NOTE	314		
	032A	11783	SN	26 APR	718.0	63.6	20574	19789	
		_	Sn		235.0	63.3	12209	566	
	034A C0SM0S 1176	~	USSR		03	64.8	656	877	
	,	_	USSR		103.1	64.8	932	876	
	039A COSMOS 1181	-	USSR		0	82.9	1001	696	
1980 03	1	-	USSR		104.7	82.9	666	\$ 96	
	044A CUSMUS 1184	~	USSR		96.1	81.2	578	260	
		-	2880	3		81.3	629	563	
10.000	U49A GURIZONI 4		USSR		1460.1	e	36255	36253	
		٠,	200		1470.3	8.7	36592	36315	
	USUA CUSMUS 1188	-	USSR	4	€0	67.4	36917	3461	
9 (-	USSR		ż	67.5	37057	3552	
0	51A METEOR 1-30	~	asso	60	÷	7.16	201	468	
၁ ရ	0518	-	USSR		96.5	97.5	612	268	
		-	S		ELEMENT	S NOT	AVAILABLE		
0	053A MOLNIYA 1-47	_	USSR	_	•	63.8	35422	67	
0		11861	USSR	21 JUN	713.6	64.1	39994	152	
0	56A COSMDS 1190	11869	USSR	1 JUL	100.6	74.1	793	781	
80 C	56 8	11870	USSR	1 1	100.5	74.1	793	770	
1980 05	56C	14808	USSR	- JE	101.0	74.0	619	787	

TRANSMITTING FREG. (MHZ)

3522 2990 35771 269 539 580 548 4116 937 778 4484 945 597 35775 AVAILABLE AVAILABLE 1463 49745 35800 35891 36773 37565 35796 39553 40350 585 628 1013 35804 11829 9338 818 666 36223 36511 1025 1007 35928 82.9 65.0 67.9 82.9 2.0 23.6 9.9 81.2 81.2 82.9 82.9 26.1 64.2 68.1 ELEMENTS NOT NOTE 1440.4 716.6 721.9 1436.2 196.1 1436.1 98.3 SEE 713.7 96.3 96.5 723.3 104.8 104.6 436.5 436.0 114.6 104.6 104.8

PERIGEE 35344 1206 1097 565 551 834 815 35942 34341 35788 35850 1391 1412 1397 1404 1506 1506 1528 1679 69711 35489 39146 35210 35709 37648 629 889 APOGEE 1472 1472 1473 1474 912 1462 1471 571 INCL I-NATION ELEMENTS NOT 114.4 74.0 14.6 74.0 14.4 74.0 14.5 74.0 67.8 74.0 74.0 74.0 74.0 74.0 63.7 PER10D MINUTES 1114.9 1115.3 1115.3 1115.7 1116.0 117.6 1417.3 96.5 102.2 102.2 1451.3 100.8 721.9 732.5 114.5 114.7 AUG AUG SEP SEP SEP SEP OCT OCT OCT § § § § NOV NOV NOV NOV DEC DEC DEC DEC DEC DEC LAUNCH NO S Š 15 ٥ 0.10 9 21 27 27 27 വ വ 24 16 31 ø ø 07 9 CATALOG NUMBER SOURCE USSR ITSO USSR USSR US US USSR USSR USSR S S 11875 11876 11878 11883 11888 11880 14193 11932 11890 1909 11962 11963 11964 11970 2003 2032 2035 2046 2069 2054 12065 12066 12070 12071 3999 11877 11879 11882 12072 12078 12086 12088 2445 2091 2092 2093 2087 2107 INTELSAT 5 F-2 COSMOS 1194 COSMOS 1195 COSMOS 1196 MOLNIYA 3-13 COSMOS 1197 COSMOS 1198 COSMOS 1199 MOLNIYA 1-48 COSMOS 1229 COSMOS 1230 COSMOS 1231 COSMOS 1192 COSMOS 1193 COSMOS 1220 **COSMOS 1206** COSMOS 1228 COSMOS 1217 **COSMOS 1225** COSMOS 1191 COSMOS 1222 COSMOS 1223 COSMOS 1226 METEOR 2-6 FLTSATCOM NAME 1980 LAUNCHES (CONT.) RADUGA 7 G0ES 4 EKRAN 089CG SBS 1 DESIGNATION 056D 057A 058B 058C 058G 058H 0898 0738 0878 0570 057E 058A 0.580 058E 058F 058J 060F 063A 0630 **V690** 8690 073A 074A 0.74C 081A 081F 085A 0.850 A780 A680 091A 092A 092D 093A 0938 095A 097A 9866 **₩**090 **4660** 099B 102A 095E 0978 098A 1 00H NAT I ONAL 1980 1980 1980 1980 1980 1980 1980 980 0861 1980 1980 980 0861 980 980 1980 1980 1980 0861 086 1980 980 980 980 980 980 980 980

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MATIONAL	Ā		CATALOG			PER100	INCL I-	APOGEE	PERIGEE	TRANSMITTING
DESIG	DESI GNATION	NAME		Saurce	LAUNCH	MINUTES	NAT I ON	Ä.	Ä.	FREG.(MHZ)
1980	L AUNCHE S	ES (CONT.)								
000	100	21.01 SUNSUU	12111	USSR	m	114.6	74.0	1462	1410	
000	1025	TOWN TOWN	12112	USSR	23 DEC	114.7	74.0	1462	1416	
0001	1000		12113	USSR	23 DEC	114.6	74.0	1462	1407	
0.401	1001		12114	USSR		114.6	74.0	1462	1411	
0801	102.1		12115	USSR	23 DEC	114.9	74.0	1466	1436	
1 980	1034	PROGNOZ 8	12116	USSR		5687.8		197364	978	
1980	104A	_	12120	USSR	26 DEC	1436.5	8.4	581	35777	
1980	1046		12471	USSR		1421.0	•	35659	35321	
1961	LAUNCHES	ES								
1 681	002A	MOLNIYA 3-14	12133	USSR	NAL 0	717.8	0.49	38381	1974	
1981	0028	,	12134	S	NAL Q	732.1	64.3	38825	2234	
1981	003A	C05M05 1238	12138	USSR	-	107.0	83.0	1773	399	
1981	0038		12139	USSR	16 JAN	105.9	83.0	1675	# 10 P	
1961	006A	COSMOS 1241	12149	บรรณ		104.9	65.8	1005	0,5	
1961	006B		12150	USSR		104.6	65.8	1023	156	
1961	0000		12151	USSR		5.501	0°.0	7001	714	
1961	008A	COSMOS 1242	12154	455D		1.96	81.2	110	0 4	
1981	0088		12155	USSR		000	7.18	7 4 E G E	2000	
1981	₩600	MOLNIYA 1-49	12156	3880		V 1 / 1 / 2	600	90006	2026	
1991	0600		12159	2000	00 CAN	0.157	A . 8 . C	24869	230	
1961	012A	KIKU 3	19761	24041		538.7	26+3	30855	250	
1961	7710	105800	12297	USSR	12 FEB	104.7	83.0	1005	958	
1981	0138	:	12298	USSR		104.6	83.0	166	955	
1981	016A	COSMOS 1247	12303	USSR		711.1	67.7	35632	4390	
1961	016E		12311	USSR		703.5	67.5	35253	400	
1961			12984	บรรล		710.4	67.7	35574	1441	
1981	0166		12985	USSR	0	710.1	\$ 00 °	37292	7807	
1981			12992	USSR	ο.	706.6	0 .	00000	0011	
1961		ASTRO A	12307	JAPAN	.	0.50	01.5	200	404	
1961			12308	NAGAL	-	5.50	0.10		48725	
1991		COMSTAR 4	12309	S :	21 FEB	143041	• •	047.00	1 0 K	
1981			12303	6	- 4	0 40	65.0	976	500	
1981		COSMOS 1249	41621	2000	2 4	2.501	0.00	040	903	
1961		000000	16621	K 5 5 5	2 T T	, -	•	1469	1 388	
1961		CONTROL 1961	12421	288D		114.6	7.00	1470	1401	
1991			12521	8550		114.7	74.0	1469	1416	
100	7220	CO3403 15.55	12323	S		115.6	74.0	1495	1465	
			12324	USSR		114.9	74.0	1470	1429	
1001			12325	USSR		115.0	74.0	1470	1443	
			12.326	A880	S MAR	115.2	74.0	1475	1454	
		, ,	75451	USSB		115.4	74.0	1478	1466	
1961	1000	9	12328	USSE	O MAR	117.6	74.0	1693	1455	
1001			12310	50		ELEMENT	S	AVAILABLE		
1001			12371	5 0	0	ELEMENTS		AVAILABLE		
1061		8 401040	12351	ussa	60	1434.5		36098	35413	
	> 0		30.41	8550	I	4	8.7	36619	36449	
1861	>		4)	Į.	•				

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NATIONAL		CATALOG			PERIOD	INCLI	APOGEE	PERIGEE	TRANSMITTING	
DESIGNATION	ION NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NATION	KM.	K.	FREG. (MHZ)	NOTES
1981 LAUN	LAUNCHES (CONT.)									
1981 0288	B - 0288W		USSR	20 MAR	SEE	NOTE	₩ ₩			e F
1981 030A	A MOLNIYA 3-15	12368	USSR			2.49	39579	775)
1981 0300		12383	USSR		732.8	ئ	40027	1063		
1981 031A	A COSMOS 1261	12376	USSR		716.6	0.89	36283	4012		
	0	12384	USSR		707.5	67.9	35657	4188		
	لن	12892	USSR		719.3	67.9	36244	4183		
	L	12893	USSR		716.1		37401	2868		
		12894	USSR		718.4	65.3	37210	3174		
	A COSMOS 1263	12388	USSR		106.8	83.0	1767	387		
	an.	12389	USSR		105.2	83.0	1625	378		
		12421	USSR		102.7	0.66	1016	760		
	A COSMOS 1266	12409	USSR		103.6	64.8	952	206		
	0	12435	USSR		103.4	64.8	937	968		
		12418	SD	24 APR	ELEMENT	AT YOU STE	VAILABLE			
1981 0388	· Cr	12446	O.S	24 APR	ELEMENT	S NOT	VAILABLE			
1981 041A	A COSMOS 1269	12442	USSR	7 MAY	100.7	74.1		785		
1981 0418	pr.	12443	USSR	7 MAY	100.6	74.1	161	784		
1981 041C	Ų	13498	USSR	7 MAY	100.4	74.0	789	767		
1981 041D		14346	USSR	7 MAY	100.0	74.1	769	749		
	A METEOR 2-7	12456	USSR	14 MAY	102.2	81.3	892	8.35		
	m	12457	USSR	14 MAY	102.4	81.3	916	824		
		15769	USSR		102.4	81.3	918	825		
		12458	NS	£0	ELEMENT	S	AILA			
	A COSMOS 1271	12464	USSR		7.96	81.2	809	290		
		12465	USSR		97.0	81.2	650	575		
	60ES 5	12472	SO	~	1436.9	3.9	35808	35797		
	A INTELSAT 5 F-1	12474	I T S O		1436.0	2.5	35804	35768		
		12497	SN	•	227.2	23.9	11601	307		
		12504	USSR			83.0	1004	926		
	- 053MR		USSR	•			344			344
	MOLNIYA 3-16	12512	USSR		717.8	64.1	38716	1637		
	1	12519	USSR	ο.	733.6	64.3	39171	1960		
		12544	ESA	0	1436.2	3.8	35799	35777		
	APPLE	12545	AIGNI	•	1447.7	6	36478	35548		
	,	12546	E 5 A	•	240*2	10.5	30965	238		
		12562	ESA	•	329.8	10.6	18652	217		
		14125	ES≱	•	115.4	10.3	7801	147		
		20837	¥ S.↓	φ.	1449.2	7.5	36499	35585		
	L COSMOS 1278	12547	USSA	•	718.9	67.1	36275	4132		
	•	12561	CSSB	•	724.0	67.5	37044	3614		
	•	17256	USSR	•	719.1	67.1	36288	4130		
	NOAA 7	12553	SO	m	101.7	0.66	850	832		
	m	12559	s O	ص ا	101.2	0.66	819	811		
		12560	SO	m	101.2	0.66	818	812		
	MOLNIYA 1-50	12556	USSR		717.2	64.4	39976	347		
		12563	USSR	24 JUN	731.9	9.49	40536	512		
	L EKRAN 7	12564	USSR	S.	1435.6	8.1	35783	35769		
		12851	USSR	ģ	5	٠	35595	55		
- -	METEOR 1-31	12595	USSR	_	97.0	97.8	634	591		
1981 0658		12586	USSR	10 JUL	97.1	97.8	634	603		

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NATIONAL	N L		CATALOG			PERIOD	INCL I -	APOGEE	PERIGEE	TRANSMITTING
DEST	DEST GNATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NATION	K K	¥.	FREG.(MHZ)
1961		LAUNCHES (CONT.)								
1981	0 69 A	RADUGA 9	12618	USSR	30 JUL	1436.2	8.0	35811	35766	
			12850	USSR	-	1473.9	8.2	36629	36418	
1981		DE 1	12624	sn	-	410.1	89.0	23325	487	
1981	0.70E		12679	SN	3 AUG	411.4	89.1	23403	489	
1991	010		14620	SO		402.3	89.2	22852	80 (d 47 -	
1981	070K		14621	S i	90 ¥ E	401-3	89.2	22807	979	
1981	070L		19478	SO		407-1		24745	0104	
1981	0 7 1 A	COSMOS 1285	12021	200	2 4	733.7	9	36476	4121	
1981			08971	ממנו	-	1.221	0 -	36825	0104	
1961	0715		13061	2000	904	726.8	• • •	0 40 E	2748	
1001		FLTSATCOM S	12635	s o		1460.4	6.5	36317	36203	
1991		•	12636	USSR		115.7	74.0	11511	1461	
1981			12637	USSR	6 AUG	115.5	74.0	1491	1462	
1981			12638	USSR		114.7	74.0	1463	1424	
1981			12639	USSR	6 AUG	114.9	74.0	1463	1439	
1981	074E	COSMOS 1291	12640	USSR	6 AUG	115.1	74.0	1463	1455	
1981	074F	COSMOS 1292	12641	USSR	6 AUG	115.3	74.0	1474	1462	
1961	0746	COSMOS 1293	12642	USSR	6 AUG	114.6	74.0	1463	1406	
1961	H\$70	C05M05 1294	12643	USSR	50 ¥ 9	114.4	74.0	1463	1390	
1961	0.74.1		12644	USSR	-	117.4	74.0	1669	1462	
1981	075A	INTERCOSMOS	12645	USSR	7	101.7	81.2	88	190	
1981			12646	USSR	-	101.8	81.2	168	193	
1981			12677	NAGAL	_	1446.6	9 6	36035	7 4 9 C E	
1981		COSMOS 1295	12681	USSR	_	0 * 0 0	82.9	0101	7 6	
1961		,	12682	USSR	-	1040	82.0	9 6	7 6 6	
1981			12783	USSE COST	5 AUG	103.	1.00	70%	404	
1861		CUSMUS 1300	20121	2000	•	0.7.4	92.5 5.5	9 4	000	
1961			10761	2001	204 400	4.00	26.47	8	77.2	
1961	4 4 6 6	CUSMUS 1302	16/21	2000	20 A 84	5001	0-42	700	769	
1001			12793	8550		100.3	74.0	776	770	
1981			14810	USSR		100.8	74.0	813	781	
1961		CDSMDS 1304	12803	USSR	4 SEP	103.8	82.9	973	406	
1961	0.878		12804	USSR		103.7	85.9	965	106	
1981		COSMOS 1305	12818	USSR		263.7	63.4	13355	1129	
1961			12827	USSR		262.4	63.4	13298	9601	
1981			14131	2000		C • 8 • 7	0 ° ° °	59671	4 4	
1981			10000	2000		1.162	0.58	1000	60,0	
1001	4160	CONTROL FORG	12836	as so		104.6	82.9	993	961	
1091		08501 3	12848	USSR		107.0	82.5	1777	397	
1081		_	12849	USSR		80	82.5	1909	399	
1981		SBS 2	12855	SO		8	2.7	35794	35776	
1981		- 3	87	USSR	0	5	82.6	1499	1489	
1981		•	12880	USSR		-	82.6	1497	1487	
1961	1 100A	SME	88	sn		91.3	7.	337	335	
1981			12889	SO	0	1 18		2710	- 1	
1981		RADUGA 10	69	USSR	9 OCT	4 36	7.8	35808	35759	
1981	1 102F		14195	USSR	9 OCT	1437.3	•	35868	35753	

	,			96 JE	OBJECTS IN ORBIT	311				
NATIONAL	J. Y.		CATALOG			PER100	I NCL I-	APOGEE	PERIGEE	TRANSMITTING
0551	DESI GNATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NATION	X X	KH.	FREG. (MHZ)
1981	LAUNCHES	ES (CONT.)								
1961	103A	COSMOS 1315	12903	USSR	13 OCT	96.9	81.2	623	592	
1981	1038		12904	USSR		97.1	81.2	653	589	
1961	105A	MOLNIYA 3-17	12915	USSR	17 OCT	713.5	64.2	39290	8 50 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	
1001	1035	VENTOR IN	12021	K 0 0 0 1		ר		TORAC	7171	
1961	107A		12930	x sn		ELEMENT		AVAILABLE		
1961	1070		12932	S		ELEMENT	S NOT	VAILABLE		
1981	108A	COSMOS 1317	12933	USSR		719.3	67.5	35973	4454	
1981	1080		12940	USSR	31 OCT	723.3		36598	4027	
1981	108E		14734	USSR		713.6	65.3	36709	3438	
1961	108F		14735	USSR		714.7	65.1	36478	3725	
1981	1086		14736	USSR					1576	
1981	1104		12938	USSR		-		08811		
1981	113A	MOLNIYA 1-51	12959	USSB		717.7	64.1	39101	1249	
1981	1130		12986	USSR 		698.8	64.3	38063	1353	
1961	1144	_	12967	7 C	20 NOV	1430.1		16166	11100	
1951	AC11	COCCOCC - 200	80571	¥1001	20 NOV		0 0	67 %	7.14	
100	4011 0411	CUSACS 1321	12076	X 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ADN 92	117.2	0	1633	2 4 1.	
100	1160		12977	2000		117.2	0 4 2	1627	0271	
1081	1160		12078	8550	28 NOV	117.1	74.0	1622	1470	
1981	116E		12979	USSR		117.1	74.0	1618	1479	
1981	116F		12980	USSR		117.0	74.0	1614	1479	
1981	1166		12981	USSR		117.0	74.0	1609	1478	
1981	116H	COSMOS 1327	12982	USSR	28 NOV	1.16.9	74.0	1091	1479	
1981	116J		12983	USSB		117.5	73.9	1655	1485	
1981	1174	COSMOS 1328	12987	บรรล		97.2	82.5	635	019	
1981	1178	1	12983	USSR	m		82.5	640	621	
1981	1194	INTELSAT 5 F-3	12994	1150	io i	1436.1	1.6	35807	35768	
1981	1198		13007	SD:	o i	230.3	23.7	11800	331	
1961	1 204	HAULU 3	10000	2000	17 DEC	4 6 6 6 6	0.00	1050	1561	
1001	1200		12000	255	٠,	110.4) F	4991	1646	
1081	1200		13000	as so		110.1	0.68	1662	16.34	
1981	120E		13001	2000	. ~	113.1	83.0	1656	1621	
1661	120F		13002	USSR		118.6	7	1658	1577	
1961	1206		13003	USSR	17 DEC	120.8	83.0	1783	1649	
1981	122A	MARECS A	13010	ESA	20 DEC	1436.1	4.5	35808	35768	
1981	1228		13011	ESA	0	565.7	•	22	272	
1981	123A	MOLNIYA 1-52	13012	S				m	1612	
1961	1230		13016	USSA	23 DEC	695.3	64.2	37438	1799	
1985	LAUNCHES	S) In								
1982	4100	C05M05 1331	13027	USSR	7 JAN	100.4	74.0	797	761	
1982			13028	USSR		100.4	74.0	793	762	
1982	001C		13029	USSR	7 JAN	100.3	74.0	785	761	
1985			13030	บรรล	7	6.06	74.0	770	733	
1985		C05M05 1333	13033	USSR	4	104.9	82.9	1011	965	
1982	0038		13034	USSR	14 JAN	104.7	82.9	1005	957	

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NATIONAL		CATALOG			PER100	1 NCL 1-	APOGEE	PERIGEE	TRANSMITTING
DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH		NATION	K.	KM.	FRE 0. (MHZ)
1982 LAUNCHES	ES (CONT.)								
1982 004A	RCA SATCOM IV	13035	SN	16 JAN	1436.2	0.0	35808	35769	
~ (13103	S C		ELEMENTS	NO1	AVAILABLE		
1982 0060 1982 006F		13104	s v	NAL 12	FLEMEN S		AVAILABLE AVAILABLE		
		13152	s S		ELEMENT	NON	AVAILABLE		
	EKRAN 8	13056	USSR	Ġ	1440.8		35988	35769	
~		13059	USSR		538.2	48.3	29461	1614	
		14117	USSR		1426-1	7.5	35770	35410	
	C0SM0S 1339	13065	USSR	17. FEB	104.7	85.9	1012	676	
		1 3066	USSR		104.6	82.9	1006	245	
	COSMOS 1340	13067	USSR		0.90	81.2	619	\$05	
		13068	USSR	19 FEB	0.70	81.2	641	589	
	•	13069	SO		1436.0	0.0	35799	35774	
	MOLNIYA 1-53	113070	USSR	ø	717.7	63.9	39513	839	
		13075	USSR		730.8	64.1	40016	086	
	COSMOS 1341	13080	USSR	3 MAR	716.8	67.7	36013	4293	
		13090	USSR		708.9	67.5	35749	4166	
	INTELSAT 5 F-4	13083	1150		1436.1	1.6	35804	35771	
		13086	SO	6 MAR	ELEMENTS	NOT	AVAILABLE		
1982 0198		13089	SO		ELEMENTS	NOT	AVAILABLE		
	GORIZONT 5	13092	USSR		1461.5	7.4	36429	36135	
		13899	USSR		1460.0	7.6	36384	36120	
	MOLNIYA 3-18	13107	USSR		717.9	64.5	39655	707	
		13112	USSR		732.3	64.8	40227	839	
982	COSMOS 1344	13110	USSR		104.8	82.9	1008	963	
		13111	USSR		104.7	82.9	1011	8 46	
982	METEOR 2	13113	บรรค	_	104.0	82.5	926	935	
		13114	USSR		104.0	82.5	926	935	
982	COSMOS 1346	13120	USSR	31 MAR	6.96	81.2	627	165	
		13121	2885 1000		1.76	81+2	0 1	886	
286	COSMOS 1348	13124	USSE.	Hdw /	718.0	0 0	30123	4200	
707	•	YO 1 C.	2000		#•no/	2000	03000	20400	
1982 030A	CUSMUS 1349	13121	3000	¥ d	9 4 6	S 6	0.00	100	
N 0		02161	* 107.	b	7 * P 7 *		7001	- C 7 9 9 K	
700	47 140 T	13129	4101	2004	2.50	•	9000	20000	
		13168	assn		7.001	74.0	700	787	
		13149	488n		100.6	74.0	796	776	
		14811	USSR	28 APR		74.0	824	784	
	COSMOS 1356	13153	USSR		97.1	81.2	635	909	
		13154	USSR	5 MAY	97.4	61.2	675	592	
	COSMOS 1357	13160	USSR		114.6	74.0	1476	1399	
		13161	USSR		-	74.0	1478	1414	
		13162	USSR		_	74.0	1478	1431	
		13163	USSR		115.2	74.0	1479	1444	
		13164	USSR		• •0	74.0	1481	1459	
-		13165	USSR		115.5	74.0	1493	1464	
		13166	USSR		୍ୟ	74.0	1503	1471	
		13167	Ġ		LC)	74.0	1522	1471	
1982 0403		13168	USSR		117.7	•	1685	1470	

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NATIONAL		CAT ALOG			PERIOD	INCLI	APOGEE	PERIGEE	TRANSMITTENS
DESIGNATION	ON NAME	NUMBER	SOURCE	LAUNCH	MINUTES		X.	KM.	FREG. (MHZ)
1982 LAUNCHE	CHES (CONT.)								
1982 041C		13172	Sn	11 MAY	ELEMEN	ELEMENTS NOT AV	AVAILABLE		
-	COSMOS 1365	13175	USSR	14 MAY	103.6		981	879	
N		13594	USSR		103.4	65.1	962	872	
985	COSMOS 1366	13177	USSR		1435.9	7.1	35814	35751	
-		14114	USSR		1436.3	7.1	35838	35742	
	COSMOS 1367	13205	USSR		717.4	0.99	36382	3953	
1982 0450	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	13215	SSS	20 MAY	704-1	66.2	36285	9386	
i 6	0 1	15551	X 600		111.0		24505	1101	
200	TANK DOMESTIC	13201	2000		1.267	0.00	25095	1221	
982		13242	25.50 G. C.	5 =	9-001	0 4 4	500	\$ 0/ 2 / 2	
982		14398	USSR	3	100.6	74.1	791	784	
		16502	USSR	25	100.6	74.1	790	788	
		18509	USSR	257	100.6	74.0	799	777	
1982 051F		18510	USSR	1 20v	10001	74.0	805	775	
0		19102	USSR	NOT T	100.6	74.1	799	774	
985	COSMOS 1372	13243	USSR	3	103.9	6.49	996	916	
982 0		13416	USSR	N N N	103.6	64.9	156	906	
		13259	USSR			65.8	1015	975	
985			USSR		SEE		374		
985	S	13269	SD		1436.1	0.0	35800	35777	
982	COSMOS 1378	13271	USSR		97.2	82.5	637	611	
200	,	13272	2880		97.4	82.5	648	621	
985	CDSMGS 1382	13295	USSR	-	717.0	68.0	36169	4147	
286		13298	USSR	-	708.4	67.8	36023	3865	
1982 000A	CUSMUS 1383	10551	USSR	NO. 00	105.2	82.9	1025	689	
982	COSMOS 1386	13363	400		1.601	, v . v	1005	2 4	
	•	13354	955	٠.	10401		1003	CRO	
982	LANDSAT 4	13367	S S		7.86	0.00	701	764	
982	COSMOS 1388	13375	USSR		114.5	74.0	1472	1391	
	COSMOS 1389	13376	USSR		114.7	74.0	1473	1407	
286		13377	USSR	21 JUL	114.9	74.0	1473	1425	
982		13378	USSR		115.0	74.0	1473	1440	
1982 073E	COSMOS 1392	13380	2000	21 50 E	115.2	0.4	1473	1457	
		13381	255D		115.6	0.4	1001	1472	
		13382	USSR		115.8	74.0	1513	1472	
1982 6733		13386	USSR		117.9	74.0	1710	1463	
	MOLNIYA 1-55	13383	USSR		717.7	64.7	39632	718	
982		13390	USSR	21 JUL	698.6	9.49	38661	741	
982	COSMOS 1400	13402	USSA		96.8	81.2	617	969	
		13403	USSR		97.2	81.2	658	585	
982		13431	CANADA	-	1436.0	0.0	35795	35776	
	MOLNIYA 3-19	13432	USSR		718.3	0.49	38699	1682	
o c		13446	255D		733-1		39492	1613	
1982 0874 1982 0874	F15 3	13492	NAGAL	J SEP	107.2	•	1227	796	
) (01461	2404		103.1	•	8001	2 4 6	
י ע		14569	2404	U 4.	10701	0 4	1146	000	
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INTER- NATIONAL DESIGNATION	NAME	CATALOG	SOURCE	LAUNCH	PER100 MINUTES	INCL I- NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREG.(MHZ)
1982 LAUNCHES	HES (CONT.)								
1982 092A	COSMDS 1408	13552	USSR	16 SEP	97.1	82.6	636	605	
		13553	USSR		9.7.6	82.6	653	619	
	EKRAN O	13554	USSR 11111	1.6 SEP	1437.0	7.1	35903	35706	
1982 0935	0041 908900	14115	1000E	20 000	719.2	65.0	36674	847E	
	•	13591	2550		707.2	65.4	36776	3053	
	COSMOS 1410	13589	USSR		115.9	82.6	1499	1490	
		13590	USSR	24 SEP	115.8	82.6	1497	1488	
_	INTELSAT SF 5	13595	1150		1436-1	1.0	35809	35766	
		13599	Sn.		132.8	24.3	4279	211	
	COSMOS 1412	13600	8880	2 OCT	6.501	64.99	266	5887	
		13053	200	55	103.0	0 4 4 0	4600	1000	
1982 100A	COSMON 1415	13600	2000	12 001	675.7	7.49	10501	19051	
	9 0	20061	4550		673.5	64.7	10075	10021	
	•	13608	USSR		305.3	52.2	17021	257	
		13609	USSR		317.6	52.2	17782	302	
		13610	USSR		675.9	64.7	19075	19039	
1982 102A	C05M05 1417	13617	USSR		104.7	83.0	1005	926	
		13618	USSR	19 OCT	104.6	83.0	866	953	
	GORIZONT 6	13624	USSR		1436.0	6.7	35799	35770	
		13630	asso.		1435.0	٠ • •	35828	35703	
	HCA SAICOM-V	15031	s :	-	1430-1		2000	35/55	
785		13636	S 0	30 001	1430.0	n 6	35933	35050	
1982 1988		13661	n v	30 00	1400-1) in	36238	1584 L	
	COSMOS 1420	13648	USSR		100.6	74.0	802	77.2	
982	! !	13649	USSR		100.5	74.0	962	767	
1982 1090		15528	USSR	11 NOV	100.5	74.0	795	277	
	SBS 3	13651	S		1436.0	0.0	35796	35775	
	ANIK C-3	13652	CANADA	12 NOV	1436.0	0.0	35793	35779	
		13653	s :		638.4	23.5	36001	363	
		13666	SO:		637.2	23.5	35555	305	
1982 115A	RADUGA 11	13000	200	AON 90	1475.0	- F	36683	10000	
1158	- 115AJ	1	2880 0880				36¢		
	METEOR 2-9	13718	USSR		101.8	81.2	884	804	
1982 1168		13719	USSR	14 DEC	101.9	81.3	868	962	
1982 116C		13720	USSR		101.8	81.2	488	803	
1982 1160		17755	USSR		101.9	81.3	808	795	
		13736	Sn		101-1	98.6	818	805	
		13737	S		98.5	98.0	673	671	
		13738	so:	_	9.66	98.6	**	737	
N I		13773	n (- ·	0.0	٠	D (
1982 118E		1377	2	21 DEC	•	0	780		
1983 LAUNCHES	HES								
1983 001A	COSMOS 1428	13757	USSR	N	104.6	82.9	1002	948	
		13758	USSR	12 JAN	104.5	82.9	992	0 4 6	

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INTER- NATIONAL		CATALOG			PERIOD	INCLI	APOGEE	PERIGEE	TRANSMITTING
DESIGNATION	Z Z	NUMBER	SUURCE	LAUNCH	MINUTES	NATION	E	E	r KE U • L MHZ J
1983 LAUNCHES	HES (CONT.)								
•		14568	S		103.8	82.9	959	912	
	C05M05 1429	13761	USSR	19 JAN	115.8	74.0	1517	1464	
1983 0028	COSMOS 1430	13762	USSR		115.6	74.0	1497	1464	
m		13763	USSR	0	115.4	74.0	1482	1462	
	COSMOS 1432	13764	USSA	0	115.2	74.0	1465	1961	
m		13765	USSE	D. (115.0	0.47	C0#1	***	
m i		13766	USSR		114.8	0.4	0041	6741	
	s	13767	USSR	.	114.6	74.0	1405	5141	
m	COSMOS 1436	13768	USSR		1.4.0	0.47	# Q # I	7001	
m		13769	USSR	•	117.9	0.47	1001	141	
	COSMOS 1437	13770	USSR		97.0	81.2	929	601	
m		13771	บรรค	0	97.1	81.2	655	584	
	IRAS	13777	Sn		102.9	0.00	903	986	
		13778	SO	26 JAN	102.3	1001	488	852	
1983 004C		13783	SO		102.9	0.66	905	885	
1983 006A	CS-2A	13782	JAPAN	4 FEB	1436.3	3.1	35790	35788	
1983 0068		13786	JAPAN	4 FEB	183.4	28.5	8397	559	
1983 008A		13791	sn	9 FEB	ELEMENTS	NOT	AVAILABLE		
1983 008B		13792	SO	9 FEB	ELEMENTS	NOT	AVAILABLE		
1983 008C		13834	Sn	9 FEB	ELEMENTS	TON	AVAILABLE		
1983 0080		13835	SO		ELEME	NOT	AVAILABLE		
1983 008E		13844	SO	9 FEB	ELEMENTS	LON	AVAILABLE		
1983 008F		13845	Sn		ELEMENTS	TON	AVAILABLE		
		13849	SO		ELEMENTS	LON I	AVAILABLE		
		13874	S		ELEMENT	NOT	AVAILABLE	•	
	COSMOS 1441	13818	assn.		8.90	81.1	200	100	
		13819	USSR		0.70	81.1	#60 60 60 60 60 60 60 60 60 60 60 60 60 6	176	
	MOLNIYA 3-20	13875	200		718.0	1 * 60	35055	9071	
		13882	2000		0.167	0.0	20000	1,506	
	EKRAN 10	13878	asso.	12 MAR	1515.4	0 • 1	5/4/5	37173	
m i		14080	3880		4.4541	1.0	21000	10000	
	MULNITA 1-30	0.000	2000		1000		40406		
0610 5861		1300	2000	TAN W	1.22.1 50.18.0	9 6	718871	1491	
	NO. TO A	10801	200		0 0 1 6 9			9854	
0020 0001	E991 308303	41051	K0 00 00	าส	7-401			9 60	
		71051	2000		104.01	0 0	900	0.87	
	8 PACK	13923	50		101-1	98.5	820	797	
		13924	S		98.6	98.6	684	929	
		14477	s		97.5	98.6	***	637	
~	COSMOS 1448	13949	USSR		104.7	83.0	1000	957	
		13950	USSR		104.6	83.0	1003	948	
	MOLNIYA 1-57	13964	USSR	2 APR	717.7	64.1	38817	1531	
		13967	USSR		699.3	64.3	37710	1726	
	TORS 1	13969	SO	A APR	1436.2	4.0	35804	35773	
m		13970	SN	4 APR	1089.7	3.2	35226	22172	
1983 0260		13971	Sn	4 APR	554.1	25.7	31639	297	
1983 028A	RADUGA 12	13974	นรรม	8 APR	1436.5	٠	35796	35791	
1983 328F		13983	USSR	8 APR	1439.1	5.8	35956	35736	
1983 030A	RCA SATCOM VI	13984	Sn	11 APR	1436.2	0	35814	35760	

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INTER-		CATALOG			PERTOD	INCLI	APOGEE	PERIGEE	TRANSMITTING
DESI GNATION	TION NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NAT ION		ž.	FREG. (MHZ)
1983 LA	LAUNCHES (CONT.)						.•		
1983 0308	ac BC	13985	SO		118.8	25.4	2955	300	
~	1A COSMOS 1452	13991	USSR		100.7	74.0	802	777	
	61	13992	USSR		100.5	74.1	789	779	
m		14812	USSR		101.0	74.1	820	788	
m ,	7A COSMOS 1455	14032	USSR	m r	97.2	85.58 65.68	637	019	
1983 0378	THE CONSTRUCT OF THE PARTY OF T	14033	X 0 0 0 1	25 APR	717	0.44	100	247	
3 m	ה הביר היים היים היים היים היים היים היים הי	14041	45.5U		707.2	8 999	36597	3294	
	J. E	14297	USSR		719.4	99	36943	3489	
1 60	70	10241	USSR	N.	789.5	67.0	4 3591	246	
	9 K	14306	USSR		720.6	64.3	39697	795	
1983 0414	1A GOES 6	14050	SO	28 APR	1436.1	2.7	35794	35782	
	18	14051	SO		116.5	25.4	2644	904	
		14069	SO		1707.4	9.0	49378	32506	
	2A COSMOS 1459	14057	USSR		104.6	83.0	1014	939	
		14059	USSR	O MAY	104.5	83.0	Ō	937	
		14064	USSR	7 MAY		65.0	E 4 6	570	
	04410	ļ	USSR	-		NOTE	304	•	
	COSMOS 1463	14075	USSR	-	97.2	82.9	026	282	
	INTELSA	14077	1150		1436.1	0.0	35806	35769	
	BA CUSMUS 1464	49041	ASSD.		104.8	82.9	9001	961	
1965 0461	D 0	40041	X 0 =	24 MAY	1.04.	72.3	26.22	956	
	CASA VENEDA 15	14104	8550		OL ITH	HEI TOTENTOIC	2262 0081T	2	
	VENERA	14107			HELIO	HELI OCENTRIC	ORBIT		
		14112	SO	35	ELEMENTS	NTS NOT	AVAILABLE		
	0568	14113	s n		ELEMENTS		AVAILABLE		
	90	14143	SO	257 ¢	ELEMENTS		AVAILABLE		
	0560	14144	sn	257 o	ELEMENTS	NTS NOT	AVAILABLE		
	6E	14145	Sn	-	ELEMENTS		AVAILABLE		
	056F	14146	Sn		ELEMENTS		AVAILABLE		
	0566	14190	s :		ELEMENTS		AVAILABLE		
589	į	16161	SO		•	'n	AVAILABLE	1	
1983 CD	COSA ECS 1	14128	₹ 00	2 2	14.004	7.0	33808	15/03	
		14130	8		366.2		20000	7.87	
983	0.58F	17331	ESA		271.9	7.3	14698	340	
	0598 ANIK C2	14133	CANADA		1436.0	0.0	35792	35780	
	059C PALAPA BI	14134	INDNSA	18 JUN	1436.1	0.0	35789	35786	
	0590	14135	Sn		614.3	23.4	34791	329	
	059E	14136	Sn	-	662.1		37246	324	
983		14139	SO		ELEMENTS	NTS NOT	AVAILABLE		
	061A COSMOS 1470	14147	USSR	•	97.3	82.5	0 4 0	611	
	0618	14148	USSE	22 JUN	97.5	82.5	656	620	
	063A	14154	SO		100.7	82.0	826	758	
	0638	14155	Sn			82.0	823.	755	
	0630	14222	s c	•	66	82.4	772	737	
	1	14223	ŝ	25.00		•		BC/	
.	USSA GALAXI I	٠,	^ •		0 4	0 6	26766	19766	
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DESIG	DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NAT TON	ž.	K K	FRE Q. (MHZ)
1983 1	LAUNCHES	(ES (CONT.)								
1983	0.66A	GORIZONI 7	14160	USSR	30 JUN	1464.3	5.5	36375	36297	
1983	0 6 6 E		14167	USSR	30 JUN	224.4	46.5	11499	207	
	C 66F		15141	USSR	30 JUN	1475.2	5.7	36603	36493	
	067A	PROGNOZ 9	14163	บรรล	- JC	CURRENT		S NOT MAINTAINED	TAINED	
	069A		14171	USSR	6 JUL	114.4	74.0	1461	1392	
	P690		14172	USSR	6 JUL	114.6	74.0	1461	1409	
	069C		14173	USSR	6 JUL	114.8	74.0	1461	1426	
	0690		14174	USSR	√nr 9	114.9	74.0	1461	1443	
m	069E		14175	บรรณ	9 10 10	115.1	74.0	1463	1459	
	069F		14176	USSR	s JUL	115.3	74.0	1479	1461	
	9690		14177	USSR		115.5	74.0	1498	1460	
	H690	COSMOS 1480	14178	USSR		115.8	74.0	1518	1460	
	7690		14179	USSR		117.4	74.0	1671	1459	
	070A	COSMOS 1481	14182	288D		707.3	67.4	36337	3501	
	0 700		16141	USSR		708.0	67.5	36293	3575	
	0.70E		14192	USSR		708.9	67.5	36428	3484	
	070F		20412	USSR	8 JUL	705.8	67.5	36931	2827	
	C 72 A		14189	s O	4	717.9	63.5	20565	19797	
	072B		14190	SN		371.8	63.9	20331	1166	
	073A	MOLNIYA 1-58	14199	USSR		624.6	0.40	34982	671	
	075A	COSMOS 1484	14207	USSR		9.96	7.16	623	565	
983	0758		14208	asso		97.1	7.16	645	290	
983	0750		14209	USSR		9.96	7.76	638	569	
	0750		14 229	USSR	24 JUL	97.4	97.7	199	602	
583	0.75E		14631	USSR		2.96	97.6	620	585	
	075F	•	14928	SSS			7.16	***	591	
	077A	TELSTAR 3A	14234	s s		1436.2	0	35800	35775	
2007	٠ د د د د		14230	٥ <u>:</u>		4.002			802	
	40 L 0		14237	n :		CORRENI		0	TAINED	
	98/0		14238	SO !		CURRENT		PON	MAINTAINED	
2001	4670	CUSMUS 1486	14540	2002	9 Y Y	0.00		8 9	ŝi	
۱ ۳	7070		14241	2000	904		7.4.7		782	
983	0620		14813	assa	50 ¥ 6	0.101	74.0	4 6 8	786	
	9620		15756	USSR		100.2	74.1	111	755	
	081A	CS-28	14248	JAPAN	5 AUG	1457.3	1.6	36216	36189	
1983 (081C		14287	JAPAN	S AUG	178.6	28.5	1608	159	
	0.84.A		14258	USSR	10 AUG	675.7	64.8	19169	19089	
~	0848	S 149	14259	USSR		668.4	64.7	19075	18814	
	C84C	CGSMGS 1492	14260	USSR		676.8	64.8	19159	19154	
	084F		14264	USSR	0	676.3	64.8	19158	19128	
983	946		14277	USSB		330.6	52.0	18513	¥03	
	H 780		14278	USSR	0	329.5	52.1	18473	375	
983	088A	RADUGA 13	14307	USSR		1466.8	S • S	36447	36324	
	0.88F	•	14333	2550		1475.2	٠. د د	36632	36466	
	9690	INSAT 18	14318	VIONI		1436.1	1.2	35831	35743	
5861	7690		14524	s 0	31 AUG	582.6	24.0	33208	247	
		12-C WINDE	01641	2000		1.01/	0.40	20000	1 0 2 5 1	
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RCA SATCOM VII. 14329 US 6 SEP 110-6 20-6 3779 3779 3770 COSMOS 1500 14320 US 6 SEP 110-6 20-6 3779 3770 3770 COSMOS 1500 14320 US 6 SEP 110-6 20-6 3770 3770 3770 COSMOS 1500 14320 US 6 SEP 130-7 0-7 0-7 0-7 0-7 0-7 0-7 0-7 0-7 0-7	R. C. A. L. C. A. L. C. A. L. C. A. L. C. C. A. L. C.	INTER-			ng n	JECIS IN URBI					
ES (CONIT.) ES (CONIT.) EX (ALAXY 2	ES (CONT.) RCA SATCOM VIII 14328 US 6 SEP 1456.2 0.5.6 376.8 286.0 COMA.X 2 14.365 US 8 SEP 1456.2 0.5.6 3570.8 220.0 COMA.X 2 14.365 US 8 SEP 1456.2 0.5.6 3570.8 3570.0 COMA.X 1.0 14.321 USSR 28 SEP 1456.1 0.2 3770.8 3570.0 COMA.X 1.0 14.321 USSR 28 SEP 1456.1 0.2 3770.8 3570.0 COMA.X 1.0 14.321 USSR 28 SEP 1456.1 0.2 3770.8 3570.0 COMA.X 1.0 14.321 USSR 28 SEP 1456.1 0.2 3770.8 3570.0 COMA.X 1.0 14.321 USSR 28 SEP 1456.1 0.2 3770.8 3570.0 COMA.X 1.0 14.321 USSR 28 SEP 1456.1 0.2 3770.0 SEP 1456.1 0	NAT I ONAL		CATALOG			PER100	INCL I-	APOGEE	PERIGEE	TRANSMITTING
LAUNCHES (CONIT.) LAUNCHES (CON	CONTINUE	DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NAT I ON	X X	¥.	FREG. (MHZ)
0.0044 RCA SATCOM VIII 14328 US 8 SEP 1440-0 0-10-1 270-0 250-0 0-10-10-1 0-10-	0.044 CALAXY 2 14329 U.S. 6 EP 1436-0 0.1 3779-0	1983 LAUNCHES	(CDNI.)								
0.004. GALAYY 2	0.004. CALAYY 2 14.379 US S SEP 14.35-1 0.0 10.0 13778 D S S S S S S S S S S S S S S S S S S	4 40 0	CA SATCOM VII	14328	Sn		36.		57	578	
0.0004 CGMOS 1500 14356 USSR 28 SEP 1476-10-0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ORGAN GALAKY 2 14376 USS SEP 1436.1 0.0 33735 35 ORGAN GALAKY 2 14372 USSR 2 28 EP 97.5 6.2.5 63.5 59 97.5 6.2.5 63.5 35 99.5 63.5 59 99.5 63.5	3 0948		14329	s n		116.6	25.5	2768		
00000 COSMOS 1500 14372 USSR 268 SEP 97.2 82.5 6539 659 659 659 659 659 659 659 659 659 65	0000 CCSMOS 1500 14372 USSR 28 SEP 077.2 82.5 653 653 653 653 654 654 654 654 654 654 654 654 654 654	098A		14365	SO		1436.1	0.0	35795	35780	
1900 1915	1900 E. KRAN II	V660	150	14372	บรรผ		97.2	۶.	639	611	
100A EKRAN 11	1006 KRRM 11	8660		14373	USSR		6	82.5	653	622	
10.05 10.05 10.05 14.05 10.0	10.05 10.0	¥ 00 T		14377	288D		1435.4	6.2	35780	35766	
10.05	10.56 INTELSAL 5 14.00 U.528 U.5 OCT 100.0 T4.1 U.5 OCT 100.0 U.5 OCT U.5	100F	4	14394	2550		1465-1	7.0	ດ	782	
10.05	INTELSAT 5 F - 7 INTELSAT 5	¥501	201	10000	2000		9-001	7.47	3 6	307	
10.00 WETEGR 2-10 14450 USSR 26 OCT 100.7 06.2 1000 10	10.00	9601	2 4 4 7	70441	1150		4 4	4 6	E C 8 2 E	35816	
100 100	1000	Ac01	7 70 7	14461	05.7		t -	80.0	1009	240	
		460	2	16453	USSB		104.5	82.9	1000	946	
1100 14455 1958 28 CGT 101-2 81-2 8492 100-4 14454 1958 11 NOV 106-3 82-9 1846 1958 11 NOV 106-3 82-9 1846 1958 11 NOV 106-3 82-9 1846 14550 14650	100 10 10 10 10 10 10 1	1004	2-1	14452	USSR		101-1	81.2	879	745	
111	111 COSMOS 1508	1098	1	14453	USSR		101.2	81.2	892	738	
1111 COSMOS 1508	1111 COSMOS 1508			14454	USSR		101.1	81.2	881	741	
11115	1111 11111 11111 11111 11111 1111 1111 1111 1111 1111 1111 1111 1111 1111 111	1114	5 15	14483	USSR		107.7	82.9	1846	392	
1113A	11134			14484	USSR		106.3	82.9	1737	371	
1134 Hebber Heb	1134 1134 1135 14553 US 18 NOV 98.4 98.6 6962 1134 1135 14553 US 18 NOV 99.2 99.6 726 726 14609 US 18 NOV 99.2 99.6 726 726 114.4 146.0 USSR 23 NOV 718.1 73.6 1521 1318 115.4 73.6 1521 145.2 USSR 24 NOV 116.0 73.6 1518 145.2 USSR 24 NOV 116.0 73.6 1518 145.2 USSR 24 NOV 116.0 73.6 1518 145.2 USSR 24 NOV 146.4 92.7 1518 145.2 USSR 24 NOV 146.4 92.1 1518 1518 USSR 146.4 USSR 146.4 92.4 161.3 USSR 146.4 92.4 92.4 162.4 92.4 162.4 92.			14506	ns		101.2	4.86	822	805	
113C	113C			14553	on S		4.80	98.6	682	619	
1130	1130			•	S		98.5	98.6	069	680	
113 113 114 114 115	11.15			14609	s :		2*66	98.6	720	21.5	
1140	115A COSMOS 1510 14521 USSR 24 NOV 116.0 73.6 1521 1151 1156 COSMOS 1510 14521 USSR 24 NOV 116.0 73.6 1521 1151 1118F 14532 USSR 24 NOV 116.0 73.6 1521 1181 118F 14542 USSR 24 NOV 1455.4 5.1 36483 36046 1186 1187 14546 USSR 24 NOV 1436.2 5.1 36483 36046 118F 14546 USSR B DEC 104.6 B2.9 10013 10013 1228 USSR B DEC 104.6 B2.9 10013 10013 1228 USSR U	113E	-	14610	50		0.00	0 F 40 Y	101 8410F	1223	
1156 COSMOS 1510 14521 USSR 24 NOV 116.0 73.6 1521 1 1 1 1 1 1 1 1 1	1156 COSMOS 1510 14521 USSR 24 NOV 116.0 73.6 1521 1 1 1 1 1 1 1 1 1	C 5 1 1	•	14520	ass n		699.2	64.3	38046	1385	
1156 1156 14522 USSR 24 NOV 115.9 73.6 1518 1 1 1 1 1 1 1 1 1	1156	115A		14521	USSR		116.0	73.6	1521	1478	
1184 GORIZONT 8	1184 GORIZONT 8	1156		14522	USSR		115.9	73.6	1518	1477	
110F 14546 USSR 30 NOV 1436.2 5.1 35971 35 120A 120A 14546 USSR 8 DEC 104.6 82.9 1013 120A 14547 USSR 8 DEC 104.6 82.9 1013 1009 122A 14551 USSR 15 DEC 97.5 82.5 639 1009 122A 14552 USSR 15 DEC 97.5 82.5 639 1009 123A MOLNIYA 3-22 14552 USSR 21 DEC 713.9 65.2 38676 11 126A 14596 USSR 28 DEC 713.9 67.0 36806 39296 127A COSMOS 1519 14590 USSR 29 DEC 675.7 66.2 19146 19146 19175 127C COSMOS 1520 14592 USSR 29 DEC 675.7 66.2 19146 19175 127C COSMOS 1521 14592 USSR 29 DEC 675.7 66.2 19146 19175 19175 19175 19175 19176 19175	118F 14546 USSR 30 NOV 1436.2 5.1 35971 35 1204 COSMOS 1513 14546 USSR 8 DEC 104.6 62.9 1003 1224 COSMOS 1513 14551 USSR 15 DEC 97.2 82.5 639 1228 COSMOS 1515 14552 USSR 15 DEC 97.2 82.5 639 1228 MOLNIYA 3-22 14550 USSR 21 DEC 97.2 82.5 650 1230 L26A USSR 21 DEC 773.4 65.2 38676 1 1250 L26A USSR 28 DEC 773.4 65.0 39676 1 126A COSMOS 1519 14590 USSR 29 DEC 775.4 65.0 36469 3 127A COSMOS 1521 14590 USSR 29 DEC 675.7 66.2 19146 19 127F COSMOS 1521 14608 USSR 29 DEC 673.4 65.0 <	1184		14532	USSR		1465.4	5.1	36483	36232	
120A COSMOS 1513	120A COSMOS 1513	118F		4	USSR		1436.2	5.1	35971	S)	
1206	1206	120A	151	4	USSD.		104.8	82.9	1013	926	
1228 COSMOS 1515 14551 USSR 15 DEC 97.5 82.5 650 1228 MOLNIYA 3-22 14552 USSR 15 DEC 97.5 82.5 650 123A MOLNIYA 3-22 14550 USSR 21 DEC 713.9 65.0 39296 1 126A COSMOS 1518 14587 USSR 22 DEC 713.9 67.0 36806 3 126A COSMOS 1519 14596 USSR 28 DEC 775.4 66.2 19186 19 127A COSMOS 1520 14591 USSR 29 DEC 675.7 66.2 19186 19 127C COSMOS 1521 14591 USSR 29 DEC 673.4 66.2 19186 19 127C COSMOS 1521 14592 USSR 29 DEC 673.4 66.2 19186 19 127C COSMOS 152 14601 USSR 29 DEC 673.1 66.2 19186 19 127C COSMOS 152 14601 USSR 29 DEC 673.1 66.2 19150 18 127C COSMOS 152 14601 USSR 29 DEC 673.1 66.2 19150 18 127C COSMOS 152 14601 USSR 29 DEC 673.1 66.2 19150 18 127C COSMOS 152 14601 USSR 29 DEC 673.1 66.2 19150 18 127C COSMOS 152 14601 USSR 29 DEC 673.1 66.2 19150 18 127C COSMOS 152 14601 USSR 29 DEC 673.1 66.2 19150 18 127C COSMOS 152 14601 USSR 29 DEC 673.1 66.2 19150 19 127C COSMOS 152 14601 USSR 29 DEC 673.1 66.2 19150 19 127C COSMOS 152 14601 USSR 29 DEC 673.1 66.2 19150 19 127C COSMOS 152 14601 USSR 29 DEC 673.1 74.0 14600 19 127C COSMOS 152 14601 USSR 29 DEC 673.1 74.0 14600 19	122A COSMOS 1515 14551 USSR 15 DEC 97.52 05.9 122B 14552 USSR 15 DEC 97.55 82.55 650 122B 14552 USSR 21 DEC 777.8 65.2 38676 1 125A COSMOS 1518 14582 USSR 21 DEC 773.4 65.0 39296 1 126A COSMOS 1518 14596 USSR 28 DEC 773.4 65.2 19186 19 126D 127A COSMOS 1520 14590 USSR 29 DEC 67.7 66.2 19186 19 127G COSMOS 1521 14691 USSR 29 DEC 67.7 66.2 19186 19 127F 127F 14607 USSR 29 DEC 67.3 66.2 19186 19 127F 14607 USSR 29 DEC 67.3 66.2 19150 18 127F 14608 USSR 29 DEC 67.3 19	1206		4	USSR	00 1	104.6	82.9	1009	***	
1225	123A MOLNIYA 3-22 14592 USSR 21 DEC 717-8 65-2 36076 11 123A MOLNIYA 3-22 14582 USSR 21 DEC 713-9 65-0 39296 11 125A COSMOS 1519 14596 USSR 28 DEC 713-9 67-0 36806 39 125A COSMOS 1519 14590 USSR 29 DEC 675-7 66-2 19186 199 127C COSMOS 1521 14591 USSR 29 DEC 673-4 66-2 19146 199 127C COSMOS 1521 14595 USSR 29 DEC 673-1 66-2 19150 189 127C COSMOS 1521 14607 USSR 29 DEC 673-1 66-2 19150 189 127C COSMOS 1522 14601 USSR 29 DEC 673-1 66-2 19150 189 127C COSMOS 1522 14601 USSR 29 DEC 673-1 66-2 19150 189 127C COSMOS 1522 14601 USSR 29 DEC 134-3 51-9 18829 127C COSMOS 1522 14612 USSR 5 JAN 114-6 74-0 1450 11 0010 COSMOS 1524 14615 USSR 5 JAN 114-6 74-0 1460 11 0011 COSMOS 1525 14615 USSR 5 JAN 114-7 74-0 1460 11 0011 COSMOS 1526 14615 USSR 5 JAN 114-7 74-0 1460 11 0011 COSMOS 1526 14615 USSR 5 JAN 114-7 74-0 1460 11	122A	151	.	3000	0	7 · / ·	0 4 0 0 0 0 0	A C C	910	
1230 MULNITA 3-22 14582 USSR 21 DEC 732-4 65-0 39296 11 1260 1260 14590 USSR 28 DEC 713-9 67-0 36806 3 1260 1274 CGSMGS 1519 14590 USSR 28 DEC 705-4 66-9 36469 3 1275 CGSMGS 1520 14591 USSR 29 DEC 675-7 66-2 19186 19 1276 CGSMGS 1521 14592 USSR 29 DEC 675-7 66-2 19186 19 1277 CGSMGS 1521 14595 USSR 29 DEC 673-4 66-2 19155 18 1276 1276 1276 14607 USSR 29 DEC 673-1 66-2 19155 18 1277 USSR 29 DEC 673-1 66-2 19155 18 1276 1277 14607 USSR 29 DEC 146-9 19155 18 1277 USSR 29 DEC 146-9 19155 18 1278 1279 14602 1525 14611 USSR 29 DEC 146-9 146-0 1460 11 1279 USSR 5 JAN 114-4 74-0 1460 11 1280 1280 1525 14612 USSR 5 JAN 114-7 74-0 1460 11 1280 1280 1525 14615 USSR 5 JAN 114-7 74-0 1460 11	1230	9221	2.0	* *	2000		8-717	65.2	0000 92.44F	1679	
1250 COSMOS 1518 14587 USSR 28 DEC 713.9 67.0 36806 36806 1260 1260 14590 USSR 28 DEC 705.4 66.9 36469 36469 1274 COSMOS 1520 14590 USSR 29 DEC 675.7 66.2 19186 19186 191276 COSMOS 1521 14595 USSR 29 DEC 675.7 66.2 19186 19186 191276 1276 1276 1276 1276 1276 1276 1276	1260 COSMOS 1518 14587 USSR 28 DEC 713.9 67.0 36806 35 1260 14590 USSR 28 DEC 705.4 66.9 36469 35 1260 14590 USSR 28 DEC 705.4 66.9 36469 35 1274 COSMOS 1520 14591 USSR 29 DEC 675.7 66.2 19186 19 1276 1276 COSMOS 1521 14595 USSR 29 DEC 673.4 66.2 19146 19 1276 1276 1276 1276 1277 14607 USSR 29 DEC 673.1 66.2 19146 19 1276 1277 14608 USSR 29 DEC 673.1 66.2 19155 18 1274 1274 14608 USSR 29 DEC 329.2 51.9 18525 18 1274 14608 USSR 29 DEC 329.2 51.9 18525 18 1274 14608 USSR 29 DEC 334.3 51.9 18525 18 16525 19 16525	1230	2	1 4	8550		737.4	0.00	39296	1778	
1260 1274 CGSMGS 1519 14590 USSR 28 DEC 705.4 66.9 36469 3 1276 CGSMGS 1520 14591 USSR 29 DEC 675.7 66.2 19186 19 1276 CGSMGS 1521 14592 USSR 29 DEC 675.7 66.2 19186 19 1277 CGSMGS 1521 14595 USSR 29 DEC 673.4 66.2 19156 19 1276 1277 CGSMGS 1521 14607 USSR 29 DEC 673.1 66.2 19155 18 1278 1279 1279 1279 1279 1279 1279 1279 1279	1260	1264	_	. 4	USSB		713.9	67.0	36806	3358	
1274 COSMOS 1519 14590 USSR 29 DEC 675.7 66.2 19186 19 1276 COSMOS 1520 14591 USSR 29 DEC 675.7 66.2 19146 19 1277 COSMOS 1521 14592 USSR 29 DEC 673.4 66.2 19146 19 1278 1276 COSMOS 1521 14692 USSR 29 DEC 673.1 66.2 19150 18 1279 1276 1279 14609 USSR 29 DEC 329.2 51.9 18525 1279 1279 14609 USSR 29 DEC 329.2 51.9 18525 1279 14609 USSR 29 DEC 14609 14652 19150 18 1279 14609 USSR 29 DEC 14609 146	1274 COSMOS 1519 14590 USSR 29 DEC 675.7 66.2 19186 19 1276 COSMOS 1520 14591 USSR 29 DEC 673.4 66.2 19146 19 1277 COSMOS 1521 14592 USSR 29 DEC 673.4 66.2 19150 18 1276 1277 1276 14608 USSR 29 DEC 673.1 66.2 19150 18 1276 1277 1279 14608 USSR 29 DEC 673.1 66.2 19150 18 1277 1279 14608 USSR 29 DEC 189.2 19150 18 1279 14609 USSR 29 DEC 189.2 19150 18625 1279 14609 USSR 29 DEC 189.2 19150 18625 1279 14609 USSR 29 DEC 189.2 19150 18625 1279 14609 USSR 29 DEC 189.2 19150 18629 1279 14601 USSR 29 DEC 189.2 19160 11 1279 14601 USSR 29 DEC 193.4 146.6 1460 114.6 1460 1460 1460 1460 1460 1460 1460 146	1260	•	. 4	USSR		705.4	6.99	36469	3273	
1276 COSMOS 1520 14591 USSR 29 DEC 675.7 66.2 19146 19 1277 COSMOS 1521 14592 USSR 29 DEC 673.4 66.2 19150 18 1278 1276 1279 14607 USSR 29 DEC 673.1 66.2 19150 18 1279 1276 1279 14608 USSR 29 DEC 329.2 51.9 18525 1279 1279 14608 USSR 29 DEC 329.2 51.9 18625 1279 14608 USSR 29 DEC 334.3 51.9 18629 14601 USSR 5 JAN 115.4 74.0 1490 11 0018 COSMOS 1522 14611 USSR 5 JAN 114.4 74.0 1460 11 0016 COSMOS 1525 14614 USSR 5 JAN 114.7 74.0 1460 11 0017 COSMOS 1525 14614 USSR 5 JAN 114.7 74.0 1460 11	1276 COSMOS 1520 14591 USSR 29 DEC 673-4 66.2 19146 19 1277 COSMOS 1521 14592 USSR 29 DEC 673-4 66.2 19150 18 1278 1276 14602 USSR 29 DEC 673-1 66.2 19150 18 1279 1276 14601 USSR 29 DEC 673-1 66.2 19150 18 1270 1270 14608 USSR 29 DEC 339-2 51.9 18525 18 1270 1270 14608 USSR 29 DEC 339-2 51.9 18525 18 14608 USSR 29 DEC 339-2 51.9 18525 18 14608 USSR 29 DEC 339-2 51.9 18525 18 14608 USSR 29 DEC 314-3 51.9 18525 18 14608 USSR 29 DEC 314-3 51.9 18525 18 14601 USSR 29 DEC 14600 1490 14 14601 USSR 29 DEC 14600 1490 14 14601 USSR 29 DEC 14600 14600 14600 14601 USSR 29 DEC 314-3 51.9 1460 14 14601 USSR 29 DEC 14600 14600 14600 14601 USSR 29 DEC 314-7 74-0 1460 14 14601 USSR 29 DEC 314-7 74-0 1460 14 14601 USSR 29 DEC 314-7 74-0 1460 14 14601 USSR 29 DEC 14601 14600	127A	_	- 4	USSR		675.7	66.2	19186	19071	
127C COSMOS 1521 14592 USSR 29 DEC 673.4 66.2 19150 18 127F 14695 USSR 29 DEC 673.1 66.2 19155 18 127C 127C 14607 USSR 29 DEC 329.2 51.9 18525 18 127H 14608 USSR 29 DEC 334.3 51.9 18529 187H 127H 14608 USSR 29 DEC 334.3 51.9 18529 18529 180014 COSMOS 1522 14611 USSR 5 JAN 115.4 74.0 1459 11 001C COSMOS 1524 14612 USSR 5 JAN 114.4 74.0 14690 11 001C COSMOS 1525 14614 USSR 5 JAN 114.5 74.0 1460 11 001E COSMOS 1525 14615 USSR 5 JAN 114.9 74.0 1460 11	127C COSMOS 1521 14592 USSR 29 DEC 673.4 66.2 19150 18 127F 14595 USSR 29 DEC 673.1 66.2 19155 18 127G 127G 14607 USSR 29 DEC 329.2 51.9 18525 18 127G 127G 14608 USSR 29 DEC 339.2 51.9 18525 18 127H 27H 29 DEC 339.3 51.9 18525 18 127H 27H 29 DEC 339.3 51.9 18525 18 14608 USSR 29 DEC 334.3 51.9 1852 1852 19 14611 USSR 5 JAN 115.4 74.0 1459 11 14612 USSR 5 JAN 114.4 74.0 1459 11 14614 USSR 5 JAN 114.6 74.0 1460 11 14615 USSR 5 JAN 114.6 74.0 1460 11 14616 USSR 5 JAN 114.7 74.0 1460 11	1278	~	4	USSR		675.7	66.2	19146	19111	
3 127F 14595 USSR 29 DEC 673.1 66.2 19155 18 1276 1276 14607 USSR 29 DEC 329.2 51.9 18525 18 1274 14608 USSR 29 DEC 334.3 51.9 18529 18529 18774 18774 14611 USSR 29 DEC 334.3 51.9 18829 18829 18774 18791	3 127F 14595 USSR 29 DEC 673.1 66.2 19155 18 1276 1276 14607 USSR 29 DEC 329.2 51.9 18525 18 1277 14608 USSR 29 DEC 334.3 51.9 18829 18625 14601 USSR 29 DEC 334.3 51.9 18829 18829 14601 USSR 29 DEC 334.3 51.9 18829 18829 14601 USSR 5 JAN 115.4 74.0 1490 1490 1490 1490 1490 1490 1490 149	127C	-	3	USSR		673.4	66.2	19150	8	
3 1276 3 1277 3 1277 4 LAUNCHES 4 LAUNCHES 4 LAUNCHES 5 14611 USSR 5 JAN 115.4 74.0 1490 1 4 0016 COSMOS 1522 14611 USSR 5 JAN 114.4 74.0 1459 1 5 0016 COSMOS 1524 14613 USSR 5 JAN 114.6 74.0 1460 1 5 0016 COSMOS 1525 14614 USSR 5 JAN 114.7 74.0 1460 1 5 0016 COSMOS 1526 14615 USSR 5 JAN 114.7 74.0 1460 1 5 0016 COSMOS 1526 14615 USSR 5 JAN 114.9 74.0 1460 1	3 1276 3 1277 3 1277 4 LAUNCHES 4 LAUNCHES 4 001B COSMOS 1522 14611 USSR 5 JAN 115.4 74.0 1460 11401 COSMOS 1524 14613 USSR 5 JAN 114.4 74.0 1460 11401 COSMOS 1524 14613 USSR 5 JAN 114.6 74.0 1460 11401 COSMOS 1524 14614 USSR 5 JAN 114.6 74.0 1460 11401 COSMOS 1525 14614 USSR 5 JAN 114.6 74.0 1460 11401 COSMOS 1525 14614 USSR 5 JAN 114.7 74.0 1460 11400 11401 COSMOS 1526 14615 USSR 5 JAN 114.7 74.0 1460 11400 11401 COSMOS 1520 14615 USSR 5 JAN 114.7 74.0 1460 11400 11401 COSMOS 1520 14615 USSR 5 JAN 114.9 74.0 1460 11400 11401 COSMOS 1520 14615 USSR 5 JAN 114.9 74.0 1460 11400 11401 COSMOS 1520 14615 USSR 5 JAN 114.9 74.0 1460 11400 11401 COSMOS 1520 14615 USSR 5 JAN 114.9 74.0 1460 11400 11401 COSMOS 1520 14615 USSR 5 JAN 114.9 74.0 1460 11400 11400 11400 11401 COSMOS 1520 14615 USSR 5 JAN 114.9 74.0 1460 1140	~		•	USSR	٥	•	66.2	19155	18970	
127H LAUNCHES LAUNCHES OO1A COSMOS 1522	LAUNCHES LAUNCHES OO1A COSMOS 1522 14611 USSR 5 JAN 115.4 74.0 1490 1 OO1C COSMOS 1524 14612 USSR 5 JAN 114.4 74.0 1459 1 OO1C COSMOS 1524 14613 USSR 5 JAN 114.4 74.0 1460 1 OO1C COSMOS 1525 14614 USSR 5 JAN 114.7 74.0 1460 1 OO1C COSMOS 1525 14615 USSR 5 JAN 114.7 74.0 1460 1	3.		14607	SS	0	29	51.9	18525	302	
LAUNCHES 001A COSMOS 1522 14611 USSR 5 JAN 115.4 74.0 1490 1 001B COSMOS 1522 14612 USSR 5 JAN 114.4 74.0 1459 1 001C COSMOS 1524 14613 USSR 5 JAN 114.6 74.0 1460 1 001D COSMOS 1525 14614 USSR 5 JAN 114.7 74.0 1460 1 001E COSMOS 1526 14615 USSR 5 JAN 114.9 74.0 1460 1	LAUNCHES COSMOS 1522 14611 USSR 5 JAN 115.4 74.0 1490 1 OO1B CDSMOS 1522 14612 USSR 5 JAN 114.4 74.0 1459 1 OO1C CDSMOS 1524 14613 USSR 5 JAN 114.6 74.0 1460 1 OO1E CDSMOS 1525 14614 USSR 5 JAN 114.7 74.0 1460 1 OO1E CDSMOS 1526 14615 USSR 5 JAN 114.9 74.0 1460 1			14608	\$	0	4	51.9	N		
001A COSMOS 1522 14611 USSR 5 JAN 115.4 74.0 1490 1 001B COSMOS 1522 14612 USSR 5 JAN 114.4 74.0 1459 1 001C COSMOS 1524 14613 USSR 5 JAN 114.6 74.0 1460 1 001D COSMOS 1525 14614 USSR 5 JAN 114.7 74.0 1460 1 001E COSMOS 1526 14615 USSR 5 JAN 114.9 74.0 1460 1	001A COSMOS 1522 14611 USSR 5 JAN 115.4 74.0 1490 1 001B COSMOS 1522 14612 USSR 5 JAN 114.4 74.0 1459 1 001C COSMOS 1524 14613 USSR 5 JAN 114.6 74.0 1460 1 001D COSMOS 1525 14614 USSR 5 JAN 114.7 74.0 1460 1 001E COSMOS 1526 14615 USSR 5 JAN 114.9 74.0 1460 1	4									
0018 C0SMOS 1522 14612 USSR 5 JAN 114.4 74.0 1459 1 001C C0SMOS 1524 14613 USSR 5 JAN 114.6 74.0 1460 1 001D COSMOS 1525 14614 USSR 5 JAN 114.7 74.0 1460 1 001E C0SMOS 1526 14615 USSR 5 JAN 114.9 74.0 1460 1	0018 C0SMOS 1522 14612 USSR 5 JAN 114.4 74.0 1459 1 001C C0SMOS 1524 14613 USSR 5 JAN 114.6 74.0 1460 1 001D C0SMOS 1525 14614 USSR 5 JAN 114.7 74.0 1460 1 001E C0SMOS 1526 14615 USSR 5 JAN 114.9 74.0 1460 1	4 001A		14611	USSR		15.	74.0	1490	1460	
001C COSMOS 1524 14613 USSR 5 JAN 114.6 74.0 1460 1 001D COSMOS 1525 14614 USSR 5 JAN 114.7 74.0 1460 1 001E COSMOS 1526 14615 USSR 5 JAN 114.9 74.0 1460 1	001C COSMOS 1524 14613 USSR 5 JAN 114.6 74.0 1460 1 001D COSMOS 1525 14614 USSR 5 JAN 114.7 74.0 1460 1 001E COSMOS 1526 14615 USSR 5 JAN 114.9 74.0 1460 1	9100		14612	USSR		14	74.0	1459	1394	
001D COSMOS 1525 14614 USSR 5 JAN 114.7 74.0 1460 1 001E COSMOS 1526 14615 USSR 5 JAN 114.9 74.0 1460 1	001D COSMOS 1525 14614 USSR 5 JAN 114.7 74.0 1460 1 001E COSMOS 1526 14615 USSR 5 JAN 114.9 74.0 1460 1	0100		14613	USSR		1 4	74.0	1460	1409	
4 001E COSMOS 1526 14615 USSR 5 JAN 114.9 74.0 1460 1	4 001E COSMOS 1526 14615 USSR 5 JAN 114.9 74.0 1460 1	0100		14614	USSR		7	74.0	1460	1425	
		A 100 4			4880		-	74.0	1460	1440	

CHJECTS IN ORBIT

INTER-)	K					
NATIONAL		CATALOG			PERIOD	INCLI	APOGEE	PFRIGEE	CMTTTMCMAGE
DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NATION	KH.	X X	FREG. (MHZ)
1984 LAUNCHE	ES (CONT.)								
1984 001F	COSMOS 1527	14616	dy y F	2	. 411	ŕ			
	152	5	9550	2 4			9 6	0047	
1984 001H	-	14613	USSB		115.6	7.	7 0	6041	
1984 0013		14619	USSR	NAL. S	117.5	74.	1671		
1984 003A	COSMOS 1531	14624	8880				100	1000	
	1	14625	9880		9 9 9	00.00	0001	0 0	
1984 005A	85-2A	14659	NADAL		1453.8	200	2001	000	
1984 008A	PRC 14	14670	PRC	0	9 -	3 6 4	C 7 10C	10000	
1984 009A		14675	SO		, ,		2	A Y MG	
1984 009C		14677	Sin			A A D T	, ;		
	COSMOS 1535	14679	asst.		104.7		1016	90	
1984 0108		14683	USSR		10401		7001	2 6	
1984 011E		14693	50		0.70	0.00			
		14604	9 =		0 80	2.02	A 6	2/2	
1984 012A		14.600) -		F14070		•	200	
		14601	0				AVAILABLE		
			2 :			2	AVAILABLE		
		07/41	0 0		FLEMEN	0	AVAILABLE		
		62/41	n (ON	AVAILABLE		
		C6/ +T	on (0		ELEMENTS	- 0 2	AVAILABLE		
		15347	s o		ELEMENTS	NOT	AVAILABLE		
		15348	s :		ELEMENTS	NOT	AVAILABLE		
	AC 41 00 MUOD	15349	SO:		ELEMENT	S NOT	AVAILABLE	-	
	DECT COMED	5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	X550		97.3	82.5	643	612	
	A 4 54 54 54	00/ 41	2550	3 0 (82.5	654	621	
	•	02/41	2000	13 7 58	1455.8		35818	35742	
	COSMOS 1538	14.750	000			7 (20ACC	******	
1984 0198		14760	assn		9.001	74.0	9 40	127	
1984 019C		15785	11558		4.001	44	000	166	
		18519	8550	21 FFB	4.001		000	00/	
	LANDSAT 5	14780	5 5		* 000	9 6	7 0 0	20/	
		14791) <u>-</u>			7.00	00,	860	
1984 021C		14782	200	W W	200		0 7 4	100	
1984 022A	COSMOS 1540	14783	assn	Z 7	1 4 3 6 4 1	•	- C - C - C - C - C - C - C - C - C - C	000	
		14948	2880		1 4	0.0	4000	35/40	
1984 023A	INTEL SAT 5 F-8	14786	1150		1436-1	0	1000 E	3475F	
1984 0238		14787	ESA			11.0	31648	200	
	COSMOS 1541	14790	USSR		718.0	64.5	36965	0000	
1984 0240		14796	USSR		709.8	64.7	36564	3304	
	COSMOS 1544	14819	USSR	15 MAR	97.2	82.5	639	909	
		14820	USSR	15 MAR	97.5	82.5	653	621	
	EKRAN 12	14821	USSR		1499-1	6.5	37068	36953	
		14828	USSR	16 MAR	624.7	46.6	35418	238	
		15139	USSR		1419.8	6.2	35540	35393	
	MOLNIYA 1-60	14825	USSR		717.0		38527	1787	
3		14830	USSR		730.9		39132	1868	
	COSMOS 1546	86	S		1436.2	6.4	35881	35695	
		14897	S	٥	.99	45.3	32280	345	
4 031		14951	USSR	29 MAR	1448.3	5.0	36092	35958	
1984 033A	COSMOS 1547	14884	USSR	4 APR	716.9	4.19	37118	3192	

INTER- NATIONAL DESIGNAT	INTER- NATIONAL DESIGNATION	NAME	CATALOG	SOURCE	LAUNCH	PER100 MINUTES	INCL I +	APOGEE Km.	PERIGEE KM.	TRANSMITTING FREG. (MHZ)
1984	LAUNCHES	ES (CONT.)				,				
,			404.41	03311	4 4 00	706.6	67.5	36707	3093	
7 00	0000	w - V 00	008 91	200	< ◀	1435.1	3.5	35806	35728	
		•	14000	2 0		626.4	30.3	35387	355	
	0.37A		14930	SO			<	VAILABLE		
	0378		14931	Sn		ELEMENTS	NOT	AVAILABLE		
1984	041A	GORIZONT 9	14940	USSR	22 APR	1436.5	9	35811	35778	
1 984	0410		14943	USSR	~	1460.1	6-4	36329	36180	
1984	0416		14044	USSR		471.0	49.1	26940	408	
1984	043A	COSMOS 1550	14965	USSR		104.9	83.0	1010	696	
1984	0438		14966	USSR	_	104.8	83.0	266	972	
	040A	COSMOS 1553	14973	USSR		104.7	82.9	1006	926	
984	0468		14974	2880	· (004.0	82.9	D 40	560	
	047A		14977	USSR	o (0 / 50 /	7.00	19170	20061	
1984	0478	_	14978	2550	MAN C.) *C / O	7.00		20101	
1984	0470	COSMOS 1556	14979	ב פע פע פע פע)	675-5	2.00	19171	19078	
100	2740		15053			335.7	52.0	18942	562	
400	100		15054	USSR	۰	321.7	51.9	1 80 99	546	
980	049A	SPACENET 1	14985	SN		1436.0	0.0	35795	35777	
1984	052A	S	14998	USSR		115.7	74.0	1509	1467	
1984	0528	COSMOS 1560	14999	USSR		115.5	74.0	1490	1468	
1984	052C		15000	USSR		115.4	74.0	1483	1459	
1984	0520	-	15001	USSR		115.2	74.0	1475	1451	
1984	052E		15002	USSR		115.0	74.0	1474	1436	
1984	052F	~	15003	assn.	-	114.8	74.0	6/41	7761	
1986	0526	COSMOS 1565	15004	2007	78 #AY	114.7	0.47	1472	1 302	
* 0	250	2	15,006	USSE.		117.7	74.0	1677	1473	
7001	0.55.0	0051 SOM200	15027	USSR		718.1	65.9	37040	3330	
1084	0.00	•	15030	8880		706.9	66.2	36599	3217	
1984	056A	C05M05 1570	15031	USSR	•	100.7	74.1	803	784	
1984	0558		15032	USSR	80 SUN	100.6	74.1	800	774	
1984	0.56C		15033	USSR	8 2 8	100.9	74.1	817	190	
1984	0560		15757	บรรล	80	9.96	74.0	\$ 09	589	
1984	059A		15039	s) (718.0	2.50	20252	11102	
1984	0598	3F 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	04004	600	2000	4000	0.50	2001	960	
1 084	0.628	,	15056	USSR		104.7	83.0	166	959	
1984	063A	RADUGA 15	15057	USSR		1434.6	4.5	35778	35736	
1984	0 6 3 E		15076	USSR	22 JUN	397.3	46.9	22805	244	
1984	063F		15693	USSR	-	1394.2	4.6	35038	34884	
1984	0.650		12021	sn	io.	ELEMENT	S NOT	AVAILABLE	•	
1984	067A	COSMOS 1577	15077	USSR	~	104.7	83.0	1001	9054	
1984	0678		15078	USSR	-	104.6	83.0	600	756	
1984	068A	-	15080	asso	ac i	98.1	200.7	8501	280	
1984	V690	COSMOS 1579	15085	USSR	O (103.9	O H	* "	116	
1984	0690		15330	200	2000	103.0	0000	0.57	842	
786	0005	15.81	15005	8550	Notes	721.1) /	37262	3256	
1984	0710		15098	USSR		705.6		36753	6662	

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DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NATION		KM.	FRE G. (MMZ)
1984 LAUNCHES (CONT.)	(CONT.)								
984 072A M	METEOR 2-11	15099	USSR	5 JUL	104.0	82.5	959	936	
984 0728		15100	USSR	5 JUL	104.0	82.5	926	937	
078A	GORIZONT 10	15144	USSR	-	1435.2	4.5	35776	35761	
0.78F		15181	USSR		1437.5	4.4	35925	35700	
079A	COSMOS 1586	15147	USSR	_	716.8	9.49	37068	3237	
		15156	USSR	-	705.7	64.5	36613	3144	
080 A	GMS 3	15152	JAPAN	-	1435.9	2.0	35790	35778	
0800		15157	JAPAN		272.0	28.9	14847	207	
_	ECS 2	15158	ESA		1436.2	0.4	37167	34411	
0818	TELECOM 1A	15159	FRANCE	P A UG	1436.2	0.2	36797	34778	
		15166	ESA		599.0	6.7	33663	929	
1984 081E		50674	ESA	4 AUG	6.009	9.9	33699	720	
1984 083B - 0	OBSAX		USSR		SEE N	NOTE	414		
084A C	COSMOS 1589	15171	USSR	8 AUG	115.9	82.6	1499	1691	
1984 084B		15172	USSR	8 AUG	115.8	82.6	1497	1488	
1984 085A M	MOLNIYA 1-61	15182	USSR		716.5	64.2	39443	845	
984 0850		15188	USSR	10 AUG	730.9	4.49	40159	869	
1984 088A C	CCE	15199	SN	16 AUG	939.5	3.0	49711	1001	
1984 0888 I	MOI	15200	FRG	16 AUG	2653.4	27.0	113818	402	
1984 088C U	UKS	15201	ž	16 AUG	2659.6	26.9	113417	1002	
		15202	SD		134.0	58.9	8404	247	
1984 088E		15205	60		133.2	28.7	3969	553	
		15206	SO		921.8	26.7	46346	645	
		19008	S		132.3	28.7	3891	551	
		19599	SO	ø	133.2	28.7	3974	552	
	MULNIYA 1-62	15214	USSN.		735.2	63.8	39377	1833	
	•	15223	2000		7.88.9	50	39119	2274	
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	CIAL MODNAS	15236	91		1436-1		35702	35783	
0630	TELSTAR 3C	15237	s S		1436.2	0	35793	35783	
093E		15244	so		264.3	27.2	14201	327	
1984 093F		15245	ns	-	606.8	22.4	34401	326	
1984 0936		15246	Sn	1 SEP	650.6	24.9	36598	386	
1984 095A C	COSMOS 1593	15259	USSR	4 SEP	675.7	64.8	19174	19084	
1984 C958		15260	USSR	4 SEP	677.2	2.49	19190	19143	
1984 C95C		15261	USSR	4 SEP	675.7	64.7	19173	19085	
1984 095F		15264	USSR	4 SEP	675.9	64.7	19174	19094	
1984 0956		15265	USSR	4 SEP	330.0	52.2	18537	347	
1984 095H		15260	USSR	4 SEP	332.9	52.1	18704	358	
1984 096A C	COSMOS 1596	15267	USSR	7 SEP	717.2	67.2	37107	3220	
1984 0960		15270	USSR	7 SEP	703.2	67.3	36639	2993	
1984 C.97A		15271	SN	8 SEP	718.0	63.5	20411	19952	
6978		15272	SN	8 SEP	369.2	63.8	20408	929	
	COSMOS 1598	15292	USSR	m	1436.0	0.0	35796	35777	
1008		15293	USSR		104.8	82.9	1001	965	
1084 101 A	GALAXY 3	15308	S	21 SEP	1436.2	0.0	35794	35781	

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USSR 27 SEP
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15482 USSR		15481	USSR		731.7	65.0	39410	1630	
15491 USSR 17 JAN 100-5 74-0 799 15491 USSR 17 JAN 100-0 74-1 15491 USSR 17 JAN 100-0 74-1 15494 USSR 18 JAN 100-0 74-1 15494 USSR 18 JAN 100-0 74-1 15495 USSR 18 JAN 100-0 74-1 15494 USSR 18 JAN 100-0 74-1 15495 USSR 18 JAN 100-0 74-1 15495 USSR 18 JAN 466-0 62-5 15545 US 24 JAN 97-4 62-5 15545 US 24 JAN 97-4 62-5 15545 US 24 JAN 97-4 62-5 15545 US 24 JAN ELEMENTS NOT AVAILABLE 15545 USSR FEB 104-0 82-5 15546 USSR FEB 104-0 82-5 15547 USSR FEB 104-0 82-5 15548 USSR EFB 104-0 15549 USSR EFB 104-0 15541 USSR 21 FEB 1436-1 15592 USSR 21 FEB 1446-7 4-1 15594 USSR 21 FEB 1446-7 4-1 15595 USSR 21 FEB 1446-7 4-2 15596 USSR 21 FEB 1446-7 4-2 15597 USSR 21 FEB 1446-7 4-2 15616 USSR 21 FEB 1446-7 4-2 15616 USSR 21 FEB 1446-7 4-1 15617 USSR 21 FEB 1446-7 4-2 15618 USSR 21 FEB 1446-7 4-2 15619 USSR 21 FEB 1446-7 4-2 15610 USSR 21 FEB 1446-7 4-2 15611 USSR 21 FEB 1446-7 4-1 15612 USSR 21 FEB 1446-7 4-2 15613 USSR 21 FEB 1446-7 4-1 15614 USSR 21 FEB 1446-7 4-1 15615 USSR 21 FEB 1446-7 4-1 15621 USSR 21 FEB 1446-7 4-1 15622 USSR 21 FEB 1446-7 4-1 15623 USSR 21 FEB 1446-7 4-1 15624 USSR 21 FEB 1446-7 4-1 15625 USSR 21 FEB 1446-7 4-1 15626 USSR 21 FEB 1446-7 4-1 15627 USSR 21 FEB 1446-7 4-1 15628 USSR 21 FEB 1446-7 4-1 15629 USSR 21 FEB 1446-7 4-1 15620 USSR 21 FEB	162	15482	USSR		100.7	74.0	801	778	
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15547 US 8 FEB ELEMENTS NOT AVAILABLE 15547 US 8 FEB 1436.1 15561 BRAZIL 8 FEB 1436.1 15562 ESA 8 FEB 1436.2 15564 BRAZIL 8 FEB 1436.2 15564 BRAZIL 8 FEB 1436.2 15564 USSR 21 FEB 1436.2 15595 US 13 MAR 100.6 108.0 15595 US 13 MAR 100.6 108.0 15615 US 13 MAR 100.6 107.8 15615 US 13 MAR 100.6 107.8 15616 US 13 MAR 100.9 107.5 15616 USSR 21 MAR 115.8 74.1 15619 USSR 21 MAR 115.8 74.1 15622 USSR 21 MAR 115.8 74.1 15624 USSR 21 MAR 115.8 74.1 15625 USSR 21 MAR 116.9 74.1 15625 USSR 21 MAR 116.9 74.1 15626 USSR 21 MAR 116.9 74.1 15627 USSR 21 MAR 116.9 74.1 15628 USSR 21 MAR 116.9 74.1 15629 USSR 21 MAR 116.9 74.1 15620 USSR 21 MAR 115.8 74.1 15626 USSR 21 MAR 115.8 74.1 15626 USSR 21 MAR 115.9 74.1 15626 USSR 21 MAR 115.9 74.1 15627 USSR 21 MAR 115.9 74.1 15628 USSR 21 MAR 115.9 74.1 15629 USSR 21 MAR 115.9 74.1 15629 USSR 21 MAR 115.9 74.1 15629 USSR 22 MAR 1519.1		15517	USSR		0	82.5	926	934	
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15574 USSR 21 FEB 1446.7 4.2 36324 36324 15591 USSR 21 FEB 1446.7 4.2 36324 36324 15592 USSR 21 FEB 1446.7 82.5 6333 6333 15595 US 13 MAR 100.5 108.0 708.0 804 15613 US 13 MAR 100.6 108.2 761 108.2 15614 US 13 MAR 100.6 107.8 827 108.2 761 15615 US 13 MAR 100.6 107.8 827 1008 15615 US 13 MAR 100.6 107.8 827 1008 15615 USSR 14 MAR 104.7 82.9 994 15617 USSR 21 MAR 115.6 74.1 1492 15619 USSR 21 MAR 115.4 74.1 1492 15619 USSR 21 MAR 115.4 74.1 1478 1562 USSR 21 MAR 115.4 74.1 1478 1562 USSR 21 MAR 115.4 74.1 1478 1562 USSR 21 MAR 114.9 74.1 1478 1562 USSR 21 MAR 118.0 74.1 1478 1562 USSR 21 MAR 118.0 74.1 1709 1562 USSR 22 MAR 159.1 5.1 37450 3580 3580 3580 3580 3580 3580 3580 35		15562	ESA		596.1	9.9	33888	280	
15581 USSR 21 FEB 1448.7 4.2 36324 33 15592 USSR 5 MAR 97.2 82.5 633 15595 US 13 MAR 100.5 108.0 784 15596 US 13 MAR 100.4 108.5 681 15614 US 13 MAR 97.8 108.5 681 15615 US 13 MAR 100.6 107.8 827 15615 US 13 MAR 100.9 107.5 827 15615 USSR 14 MAR 100.4 107.5 875 15617 USSR 21 MAR 115.4 74.1 1497 15620 USSR 21 MAR 115.4 74.1 1478 15622 USSR 21 MAR 115.1 74.1 1478 15624 USSR 21 MAR 114.8 74.1 1478 15625 USSR 21 MAR 114.8 74.1 1478 15626 USSR 21 MAR 118.0 74.1 1478 15626 USSR 21 MAR 118.0 74.1 1709 15626 USSR 21 MAR 118.0 74.1 1709 15626 USSR 22 MAR 118.0 74.1 1709 15627 USSR 22 MAR 118.0 74.1 1709 15628 USSR 21 MAR 114.8 74.1 1709 15629 USSR 22 MAR 118.0 74.1 1709	162	15574	USSR		1436.2	4.1	35815	35760	
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15598 USSR 14 MAR 104.6 82.9 1008 15617 USSR 21 MAR 115.6 74.1 1492 15619 USSR 21 MAR 115.4 74.1 1487 15620 USSR 21 MAR 115.4 74.1 1479 15620 USSR 21 MAR 115.1 74.1 1479 15622 USSR 21 MAR 114.9 74.1 1478 15624 USSR 21 MAR 114.9 74.1 1478 15625 USSR 21 MAR 114.8 74.1 1478 15626 USSR 21 MAR 114.8 74.1 1478 15626 USSR 22 MAR 118.0 74.1 1709 15630 USSR 22 MAR 1519.1 5.1 37450 15630 USSR 22 MAR 1422.6 4.9 35589		01001	2		2001	6.701		723	
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15623 USSR 21 MAR 114.8 74.1 1478 15624 USSR 21 MAR 114.6 74.1 1476 15625 USSR 21 MAR 118.0 74.1 1709 15626 USSR 22 MAR 1519.1 5.1 37450 3 15630 USSR 22 MAR 1422.6 4.9 35589 3 15629 ITSO 22 MAR 1436.1 0.0 35609 3	~	15622	USSR		114.9	74.1	1478	1424	
15624 USSR 21 MAR 114.6 74.1 1476 15625 USSR 21 MAR 118.0 74.1 1709 15626 USSR 22 MAR 1519.1 5.1 37450 3 15630 USSR 22 MAR 1422.6 4.9 35589 3 15629 1750 22 MAR 1436.1 0.0 35609 3	-	15623	USSR		114.8	74.1	1478	1409	
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DESIGNATION NAME	LL ¹		SOURCE	L AUNCH	MINUTES	NATION	KM.	M W C	FRED.(MHZ)	NOTES
LAUNCHES (CONT.)	~									
0588		15890	USSR	8 JUL	97.5	82.5	653	622		
		19241	USSR		97.1	82.5	633	603		
MOLNIYA	3-25	15909	USSR		717.6	64.3	39588	757		
	į	15916	USSR	17 JUL	37	64.2	40643	269		
SECTION COSMOS 1670	670	15930	assn :	1 AUG	104-1	6.49	1006	895		
OCCA SUNCE SOUCH	.	15935	۲ ر د د	5 A US	6.701	6.08	1258	800		
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		15963	ussa		1472.4		36566	36405		
071A COSMOS 1675	675	15952	assn		A 1.7	67.5	37871	2502		
	•	15955	USSR		708.2	67.4	37407	2022		
C73A PLANET A		15967	NAGAL		OT LAH		7 1800	•		
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OZ4A MOLNIYA 1-64	1-64		USSR		7.17.7		39317	1032		
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COSMOS	1677	15986	USSR		103.9	64.7	1000	882		
		15993	AUSTRL		1436.2	0•0	35817	35760		354
		15994	s :		1436.2	0.0	35799	35777		35 ¢
OZAF	*	10000	2 2	29 AUG	1438-1	1.1	35847	35806		354
0.76		10091) <u>-</u>		7 4 6 6	0 1	40.00	976		
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12.0		16390	200		201		***			
077H		16391	USSR		104-8	0.17	1120	A37		
NZLO		16392	USSR		104.9	71.0	1144	87.80		
079A COSMOS 16	1680	16011	USSR		100.7	74.1	801	111		
		16012	USSR	4 SEP	100.5	74.1	194	77.2		
079C		17754	USSR	4 SEP	100.9	74.0	817	784		
0828 - 0822			USSR	19 SEP	SEE NO	E	\$			\$20
084A COSMOS 16	1684	16064	USSR	24 SEP		63.2	37422	2928)
084D		16070	USSR		706.0	0.49	36848	2921		
_	586	16095	USSR	27 SEP	90.2	51.6	284	280		
0.87A INTELSAT VA	VA F-12	10191	1150		1436.1	0.0	35810	35764		
0878		16102	Sn	29 SEP	532.0	23.2	30485	253		
088A COSMOS 168	587	16103	USSR	30 SEP	717.6	65.5	37031	3315		
0880		16106	USSR	30 SEP	703.6	65.7	36675	2978		
090A CDSMOS 1689	589	16110	USSR		0.96	7.76	601	535		
		16111	USSR		7.96	7.76	642	562		
091A MOLNIYA 3-26	3-26	16112	USSR		18	9.49	38121	2264		
0160		16125	USSR	3 OCT	734.0	64.8	38672	2480		
0928		16116	S	3 OCT	ELEMENTS	MOT	AVAILABLE			354

NAME	CATALOG			PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREG. (MHZ)	NOTES
	NUMBER	SOURCE	LAUNCH						
LAUNCHES (CONT.)									
	16117	ns	3 OCT	ELEMENTS	NOT	AVAILABLE			354
	16119	SO.	3 OCT	ELEMENTS	X 0 X	AVAILABLE AVATIABIF			
	16120	0 0	100 6	718.0		20510	19852		
	16137	s o		368.2	. w	20398	980		
COSMOS 1690	16138	USSR		113.7	~	1414	1378		
COSMOS 1691	16139	USSR	9 OCT	114.0	82.6	1414	1408		
COSMOS 1692	16140	USSR		113.8	82.6	1414	1386		
	16141	USSR	9 OCT	113.8	82.6	1415	1389		
COSMOS 1694	16142	USSR		113.9	85.6	1415	1395		
COSMOS 1695	16143	USSR		114.0	82.6	1414	1402		
	16144	USSR	9 OCT	114.7	82.6	1467	1414		
	1,6266	USSR	9 OCT	114.0	82.6	1430	1391		
	16267	บรรค	9 OCT	113.1	82.6	1452	1287		
	16268	USSR	9 OCT	115.0	82.7	1520	1386		
	16269	USSR		114-1	82.6	1424	1402		
	16270	USSR	9 OCT	113.7	82.7	1603	1191		
	16271	USSR	9 OCT	114.0	82.6	1415	1402		
	16272	USSR		113.5	82.6	1421	1350		
	17168	USSR		113.4	82.6	1419	1341		
	18777	USSR	9 OCT	114.0	82.6	1412	1410		
COSMOS 1697	16181	USSR		101.9	71.0	852	845		
	16192	USSR	22 OCT	101.7	71.0	84.5	835		
COSMOS 1698	16183	USSR		716.7	9.49	37076	3224		
	16186	USSR		707.9	2.49	36751	3114		
HOLNIYA 1-65	16187	USSR		717.4	64.7	38101	2234		
	16191	CSSE		0.860	0.0	3/100	7077		
METEOR 3	16191	USSR		109.3	82.5	1208	1178		
	16194	กรรษ		110.2	82.6	1245	1222		
COSMOS 1700	16199	USSR	25 OCT		M M	35824	35757		
	16214	USSR		1431.2	. E	35794	35586		
MOLNIYA 1-66	16220	USSR		717.6	0.49	39810	534		
	16223	USSR		701.0	2 - 49	38786	739		
COSMOS 1701	16235	USSR		417.5	2.70	505/5	2389		
	16243	USSR		7.007	* 10	2007	7967		
RADUGA 17	16250	USSR	15 NOV	1436.0	ις ·	35816	35754		
	16339	USSR	_	1477.1	3.0	30080	30482		
COSMOS 1703	16262	USSR		97.3	82.5	642	612		
	16263	USSR	_	97.5	82.5	0 0 0	622		
MORELOS B	16274	MEXICO	27 NOV	1436.1	0.0	35801	35772		354
AUSSAT 2	16275	AUSTRL	_	1436.2	0.0	35796	35778		A M
SATCOM KU2	16276	SO	28 NOV	1436.2	0-0	35791	35784		8 6 7
	16293	SO	27 NOV	645.9	26.1	36193	004		
	16294	Sn	27 NOV	638.9	26.3	35989	396		
	16295	SO	28 NOV	620.6	26.3	35061	385		
COSMOS 1704	16291	USSR	28 NOV	104.8	82.9	1006	096		
	16292	USSR	00	104.6	82.9	866	953		
COSMOS 1707	16326	USSR	~	97.2	82.5	641	612		
	16327	USSR		97.5	82.5	653	622		
COSMOS 1709	16368	USSR		104.8	65.9	1009	ĸ		

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NATIONAL	4		CATALOG			PERIOD	INCLI	APOGEE	PERIGEE	TRANSMITTING
DESTGNATION	ATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NATION	X X	× ×	FREQ. (MHZ)
1985 L/	LAUNCHES	S (CONT.)								
_	168		16369	USSR	19 DEC	104.6	82.9	1002	951	
1985 11	117A	MOLNIYA 3-27	16393	ഗ	24 DEC	712.9	63.3	38218	1895	
	117F		16402	USSR	24 DEC	732.6	63.3	38922	2162	
1985 1	118A		16396	USSR	24 DEC	675.7	62.9	19152	19106	
1985 1	1188	COSMOS 1711	16397	USSR	24 DEC	675.7	0.99	19152	19106	
	118C	COSMOS 1712	16398	USSR		676.3	62.9	19154	19133	
1985 11	118F		16404	USSR		675.5	62.9	19129	19119	
1985 11	118K		16445	USSR	24 DEC	340.4	65.3	18760	97.7	
	1186		16446	USSR		340.3	65.3	18755	783	
	1 19A	METEOR 2-13	16408	USSR		104.0	82.5	756	933	
1985 1	198		16409	USSR	26 DEC	104.0	82.5	756	933	
1986 L/	LAUNCHE	5								
1986 0	02A	COSMOS 1716	16449	USSR	O O	115.5	74.0	1490	1462	
986	0025		16450	USSR		115.8	74.0	1511	1474	
	0000		16451	488n		115.6	74.0	1403	1473	
	0020		16452	USSR		115.3	74.0	1482	1452	
	002E		16453	USSR		115.1	74.0	1482	1438	
	002F		16454	USSR		115.0	74.0	1462	1424	
	0026		16455	USSR		114.8	74.0	1482	1410	
ø	002H		16456	USSR	NAL Q	114.6	74.0	1480	1397	
1986 0	0027		16457	USSR		117.9	74.0	1695	1478	
	9600	SATCOM KUI	16492	SD		1436.2	0.0	35793	35783	
	003C		16483	Sn	N	621.3	26.8	35083	399	
1986 00	005A	COSMOS 1725	16493	USSR		104.8	82.9	866	996	
	0058		16494	USSR	17 JAN	104.6	82.9	166	963	
	006A	COSMOS 1726	16495	USSR	17 JAN	97.2	82.5	639	209	
1986 00	9900		16496	USSR		97.4	82.5	652	619	
1986 00	007A	RADUGA 18	16497	8880	17 JAN	1436.0	3.6	35794	35775	
	007E		16501	USSR	7	647.7	47.0	36585	252	
	0C7F		16870	USSR		1472.4	m	36651	36339	
	0.08A	COSMOS 1727	16510	บรรล	m	104.8	82.9	1012	957	
	9600		16511	USSR	_	104.7	82.9	1002	957	
	010A	PRC 18	16526	2 1	1 FEB	1436.9	2+2	35813	35791	
	8010		10528) (1) (1)		0.830	31.0	35377	874	
۰ ر	¥110	COSMUS 1729	12001	200		1111	7.00	2007	2642	
	1110		10033	X ()		7.507	0 • 50	37230	6267	
	4 4 1 0		16001	<i>n</i> 0		ELEMENIS 61 CARACA		AVAILABLE		
	0 7		74601	2		ELEMENIS				
	C 14C		16622	s c		CURRENT			MAINTAINED	
	0140		10023	s :		CORRENT			MAINIAINED	
	1 * E		10024	ŝ		CORREN			MAINIAINED	
	014F		16625	s n		CURRENT	ELEME	NOT MA	INTAINED	
	0146		16630	SO		ELEME	POZ	AVAILABLE		
	014H		16631	S	_	ELEMENTS	LOX LOX	AVAILABLE		
	015A	C05M05 1732	16593	USSR		116.0	73.6	1524	1477	
ø	c 156		16594	USSR		115.9	73.6	1520	1476	
ø	016A	85-28	16597	JAPAN	12 FEB	1435.1	0.0	35807	35768	
1986	16C		16600	LAPAN	12 FEB	463.9	28.2	26713	232	

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NATIONAL		CATALOG	0		PERIOD	INCL I-	APOGEE	PERIGEE	TRANSMITTING
DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NATION	M	X	FRED. (MAZ)
1986 LAUNC	LAUNCHES (CONT.)								
1986 0478		16799	USSR	18 JUN	104.6	82.9	1024	956	
0	MOLNIYA 3-29	16802	ı۸		718.4	64.8	39571	814	
		16805	USSR		733.2	65.1	40329	781	
1986 050A	COSMOS 1761	16849	USSR	5 JUL	718.4	64.3	37342	3044	
1986 050D		16854	USSR	5 JUL	710.1	64.7	36698	2976	
1986 052A	COSMOS 1763	16860	USSR	16 JUL	100.3	74.0	798	751	
1986 0528		16864	USSR		100.3	74.0	798	747	
1986 052C		16865	USSR		6.66	74.0	176	730	
1986 0520		16866	USSR		8.66	74.0	277	727	
1986 C52E		16867	USSR		100.0	74.0	977	735	
1986 055A	COSMOS 1766	16881	USSR	80	97.3	82.5	949	\$19	
		16882	USSR		97.5	82.5	656	622	
1986 057A	MOLNIYA 1-67	16885	USSR	30 JUL	717.9	2.49	39063	1296	
1986 057D		16889	USSR	30 JUL	731.6	65.1	39760	1275	
1986 061A	EGP	16908	JAPAN		115.7	20.0	1498	1479	
1986 0618	JAS-1	16909	JAPAN	12 AUG	115.7	50.0	1497	1480	
1986 061C		16910	JAPAN		116.9	50.0	9651	1483	
1986 062A	COSMOS 1771	16917	USSR		104.2	65.0	1000	016	
1986 062C		17035	USSR		103.9	65.0	978	902	
1986 065A	COSMOS 1774	16922	USSR	80	719.0	2.49	38403	2011	
		16925	บรรห			65.3	37622	2196	
			USSR				* 64		
	MOLNIYA 1-68	16934	USSR		717.8	64.7	38356	1 999	
		16939	USSR	io e	731.2	64.8	39004	2011	
	COSMOS 1777	16952	usse.		9.00	0.0	609	Ξį	
		10903	300		100.4	0.0			
1960 0714	COSMOS 1770	10901	X 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	16 550	7.874	4 4	19140	19110	
		16063	8551		675.7	9 4	10151	19107	
	,	16968	ussa Ussa		675.2	8.49	19146	19085	
		16984	2550		337.9	64.7	19095	286	
		16985	USSR		337.5	64.8	19087	273	
1986 073A	NOAA 10	16969	ns		101.1	98.5	822	801	
1986 0738		16982	sn		9.66	7.86	745	736	
		16983	SO		98.3	98.6	686	699	
	COSMOS 1782	16986	USSR		97.4	82.5	449	619	
	i	16987	USSR		97.5	82.5	652	625	
	COSMOS 1783	16993	USSR	3 001	0.866	0.50	1959	7601	
		96691	ASSD.	.	357.0	0.50	19340	0001	
1980 0784	CO3MOS 1785	15021	2000	100 01	7.01/	000	10401	7 A A A	
		0001	K 000		2 1			0 16 1	
	MULNIYA 3-30	17028	2000		B • / 1 /	***	39003	1,540	
	•	140/1	2000) · ·	10000	- 1	
	RADUGA 19	1 7040	2550	ο .	1430.4	0 0	22024	00/00	
		700/1	2000	20 00	1.760	A 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	7004	207	
		17053	3000		7.821	0.0	2004	241	
		17065	n (o r	U.U. 41	0.9	2000	20.00	
	CUSMUS 1788	000/1	nı) P	0 6	4 6	1 7 7	
	CUSMUS 1791	000/1	2000	AON 51	*****	0000	1101	D 1	
8080 0861		180/1	2000		5.		201	;	

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1				36 80	CTS IN ORBI	911			-	
NATIONAL			CATALOG			PER100	1 NCL 1	APOGEE	PERIGEE	TRANSMITTING
DESI GNATION	MOLLEN	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NATION	X.	A.	FREG. (MHZ)
1986 L	LAUNCHES	S (CONT.)								
1986 0	0 8 6 C		18552	USSR	13 NOV	104.1	82.9	970	929	
		POLAR BEAR	17070	S	14 NOV	104.8	89.5	1016	955	
1986	288d		17071	SO		104.8	89.5	1014	955	
	089C		18426	SD	4	105.1	89.1	1054	946	
	0880		18525	S O	_	104.3	89.9	996	955	
	089A	MOLNIYA 1-69	17078	USSR	in i	717.7	63.2	38199	2152	
	0890		17081	SSE	15 NOV	735.8	63.2	877	2462	
	W 060	GORIZONT 13	17083	USSB	1 8 NOV	1436.2	•	579	35778	
	9060		17125	2550	1.8 NOV	1437.4	N !	35868	35755	
	0 90F		67141	assn:	0 8 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1	632.9	6.7.4	35812	268	
	COIA	COSMOS 1793	17134	USSR	20 NOV	717.7	65.6	\$10LE	2437	
	0160		17147	USSR	ADN 02	n	60.3	37499	2265	
	V260		17138	USSR I	ZI NOV	0	0.4	864	1464	
	6260		17139	2880	>DN 12	115.4	0.4	1479	1404	
	0920		17140	488D	21 NOV	115.2	74.0	1476	1453	
	0.00		17141	CSSP	21 NOV	115.0	•	1470	1442	
	092E		17142	USSR	21 NOV	114.9	74.0	1470	1426	
	092F		17143	USSR	21 NOV	~		1470	1412	
	0926	S	17144	USSR	21 NOV	7	74.0	1470	1397	
	0.92H	COSMOS 1801	17145	USSR	21 NOV	114.4	74.0	1469	1383	
	0.924		17146	USSR	21 NOV	117.6	74.0	1674	1474	
	093A	COSMOS 1802	17159	USSR	24 NOV	104.9	82.9	1022	957	
986	0938		17160	USSR	24 NOV	104.8	82.9	1016	952	
	4460	COSMOS 1803	17171	USSR	2 DEC	115.9	82.6	1499	1495	
	0.048		17178	USSR	2 DEC	115.9	82.6	1497	1403	
	0940		20284	USSR	2 DEC	117.4	83.2	1737	1387	
	096A		17181	S	5 DEC	1436.1	٠	35859	35712	
	097A	COSMOS 1805	17191	USSR	10 DEC	97.2		640	612	
	0978		17192	USSR	10 DEC	97.5	82.5	651	622	
	098A	COSMOS 1806	17213	8880	12 DEC	718.8	62.8	37864	2540	
	0960		17216	USSR	12 DEC	705.8	63.3	37285	2479	
	1 00 A	COSMOS 1808	17239	USSR	17 DEC	105.0	82.9	1017	196	
	1009		17240	USSR	17 DEC	104.8	82.9	1010	962	
	1000		18545	8550	17 DEC	104.4	82.9	989	945	
	101A	COSMOS 1809	17241	USSB	18 DEC	104-1	82.5	963	938	
	1018		17242	2880	1.8 DEC	104.1	82.5	962	938	
	7101		10271	200	18 DEC	103.8	82.0	000	#16	
	0101		17269	S S S S	18 DEC	104.2	82.0	216	0 ()	
9861	101		0/2/1	X 0 0 0	18 050	1.401	85.4	200	8 40	
	1101		1/2/1	2000	18 UEC	0.00	96.4	8 6	600	
	1016		11212	200	18 UEC	103.5	G • 7 8	456	216	
	HIOT		17273	200	18 DEC	103.4	82.5	932	805	
	6101		17274	ASSD.	18 DEC	•		686	935	
	1016		17844	USSR	18 DEC	'n	2	938	906	
1986	101		18680	USSR	18 DEC	m	Š	937	5	
1996 1	103A	MOLNIYA 1-70	17264	USSR S	26 DEC			0	Ň	
1986	1030		17267	USSR	26 DEC	698.8	63.3	38363	1052	
1987	LAUNCHES	S								
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NATIONAL DESIGNATION	N NAME	CATALOG	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING Fred.(MMZ)
1987 001A	METEOR 2-15	17290	USSR	S JAN	104.0	82.5	957	936	
1987 0018		17291	USSR	S JAN	104.0	82.5	955	936	
	COSMOS 1812	17295	USSR	4	97.3	82.5	641	615	
		17296	USSA	.		82.5	652	624	
1987 0040			2880		3 6	NOTE	• • • • • • • • • • • • • • • • • • •		
1987 0068	TRI COMCOO	17303	2000	21 JAN	4-001	76-1	407	0 % 0 %	
		18257	USSB		1000	74-0	784	772	
	MOLNIYA 3-31	17328	USSR		717.7	63.1	38402	1949	
		17333	USSR		730.8	63.1	38874	2118	
1987 009A	COSMOS 1816	17359	USSR	29 JAN	104.8	82.9	1001	096	
		17360	USSR	•	104.6	82.9	1004	646	
	S	17369	USSR	1 FE8	100.7	65.0	808	775	
	ASTRO C	17480	JAPAN	5 FEB	4.46	31.1	529	447	
1987 C12B		17481	JAPAN	5 FE9	95.7	31.1	929	486	
		18927	JAPAN	5 FEB	95.2	30.8	578	475	
1987 015A		17506	SN	12 FEB	ELEMEN	NO1	AVAILABLE		
		17507	SO	12 FEB	ELEMENTS	FON	AVAILABLE		
	COSMOS 1821	17525	USSR		104.8	82.9	1012	686	
		17526	USSR		104.6	82.9	1006	846	
	MOS-1	17527	JAPAN		103.2	99.1	606	906	
186		17528	JAPAN		0.00	97.5	882	628	
787	COSMOS 1823	17535	2550		116.0	73.6	1521	1477	
987		17536	USSR			73.6	1518	1477	
987	•		รรรก				\$0¢		
	GDES 7	17561	SD		1436.1	0.0	35806	35771	
987		17562	S	•	102.7	21.7	1539	234	
786		17563	SO	_	4.099	17.3	37161	323	
287	COSMOS 1825	17566	USSR		97.2	82.5	049	610	
		17567	USSR	m	97.5	82.5	652	621	
		17582	USSR		113.8	82.6	1409	1392	
		17583	SSS		113.7	82.6	1409	1361	
		17584	USSR		114.0	82.6	1412	1408	
		17585	USSR		113.9	82.6	1409	1404	
1987 020E		1 7 3 8 9 1	3000	X 4 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	113.8	95.0	6041	D 60 00 00 00 00 00 00 00 00 00 00 00 00	
	0 1	10011	2000	ZVE F	X - 7 - 1	0.20		0041	
		17500	2000	_	9.11	0.02		0 4	
	•	17590	455 P		101-7	71.0	0 40	7 F	
		18416	assn		104.7	71.0	1124	830	
		18417	8880		105.0	71.0	1148	838	
-		18527	USSR		104.9	71.0	1137	839	
		18550	USSR		104.6	71.0	1115	837	
	RADUGA 20	17611	USSR		1436.1	2.6	35791	35783	
		17705	USSR		1442.0	2.6	36004	35799	
1987 028E		17709	USSR	19 MAR	635.6	4.7.4	35901	318	
1987 029A	PALAPA 8-2P	17706	INDNSA		1436.2	0.0	35789	35785	
286	_	17845	USSA	-	92.2	51.6	399	363	
-		17902	USSR	4	201.4	64.7	9862	142	
1987 0368	COSMOS 1839	17903	USSR	24 APR	191.8	64.7	9144	134	

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COSMOS 1844	NATIONAL	CATALOG			PERIOD	INCLI-	APOGEE	PERIGEE	TRANSMITTING
LAUNCHES (CONT.) 2005C COSHOS 1840 177010 USSR 24 APR 176.2 64.7 70818 2005C COSHOS 1842 177011 USSR 24 APR 176.2 64.7 70818 2005C COSHOS 1842 177011 USSR 21 APR 176.2 64.7 70818 2005C COSHOS 1844 177011 USSR 111 MAY 176.2 64.7 36.2 36.2 64.7 70.0 10.0 10.0 10.0 10.0 10.0 10.0 10	NOI	NUMBER	SOURCE	LAUNCH	MINUTES	NATION	Ä.	X *	FRE 0. (MHZ)
0.00 C COSMOS 1840	(CONT								
1791 1754	036C COSMOS 184	17904	USSR		226.1	•	11693	138	
17911 1757 1767	987 0366	17910	USSR		176.8	64.8	7981	128	
0.00 CORLIZONT 14 170910 USS4 27 APR 07.2 82.5 054 054 054 054 054 054 054 054 054 05		17913	USSR		176.2	7.49	7858	210	
0.054 GRILZONT 14 17912 USS4 17 APR 130-33 4-3 35707 350 004-004-00-0-0-0-0-0-0-0-0-0-0-0-0-0-0	038A COSMOS 184	11621	USSA		97.3	82.5	247	615	
0400 GORIZONI 14 17409 USSR 11 MAY 1397-9 4-2 35083 340000 COUNT COUNTY 14 1770 USSR 11 MAY 1397-9 4-2 35083 34000 COUNTY 14 1777 USSR 11 MAY 1397-9 4-2 35083 34000 COUNTY 15 18 18 18 18 18 18 18 18 18 18 18 18 18	0386	17912	USS4		97.5	N	429	623	
0400 0400 0400 0400 0400 0400 0400 040	040A GORIZONY 1	17969	USSR		1436.3	4.3	35797	35781	
0416 COSMOS 1844 1773 USSR 11 MAY 557-1 47-0 34072 0418 0418 0418 0418 0418 0418 0418 0418		17972	OSSA		1397.9	4.2	35083	34985	
0415 C05M05 1844 17973 US5R 11 MAY 597.7 77.9 852 0410 0410 0411 US5R 13 MAY 100.0 77.9 852 0411 0411 US5R 13 MAY 100.0 77.0 852 0411 0411 US5R 13 MAY 100.0 77.0 11129 11141 US5R 13 MAY 100.0 77.0 11129 11141 US5R 13 MAY 100.0 77.0 11129 11129 11141 US5R 13 MAY 100.0 77.0 11129 112		18111	กรรห		537.1	6-94	30892	128	
0415	040F	18112	USSR		597.7	47.0	34107	* * *	
041C	041A C0SM0S 184	17973	USSR		101.9	70.9	852	845	
0410		17974	USSR		101.7	71.0	40	827	
10 10 10 10 10 10 10 10		18410	USSR		105.0	71.0	-	845	
041E 1047E USSR 13 MAY 105-1 71.0 1132 041E 041E 1047E USSR 13 MAY 105-1 71.0 1154 043A 1047E USSR 13 MAY 100-0 71.0 77.0 77.5 043A 1000 US 15 MAY ELEMENTS NOT AVAILABLE 70.0		1841:1	USSR		104.8	0.17	1129	845	
0416	987 041E	18412	USSR		104.8	71.0	1132	839	
0416	987 041F	18476	USSR		105.1	71.0	1154	841	
0430 0431 0432 0432 0432 0432 0432 0432 0432 0432	987 0416	18687	USSR		100.0	71.0	765	755	
0436 0437 0437 0438 0438 0438 0438 0438 0438 0438 0438		17997	SO		ELEME	NOT	VAILABLE		
043C 043C 16007 US 15 MAY ELEMENTS NOT AVAILABLE 043E 18008 US 15 MAY ELEMENTS NOT AVAILABLE 043E 18000 US 15 MAY ELEMENTS NOT AVAILABLE 043F 18000 US 15 MAY ELEMENTS NOT AVAILABLE 043G 18002 US 15 MAY ELEMENTS NOT AVAILABLE 043G 18002 US 15 MAY ELEMENTS NOT AVAILABLE 048D 18008 USSR 4 JUN 719-0 66-5 38102 048D 18008 USSR 4 JUN 710-0 66-5 38102 10 049D 18008 USSR 1 JUN 700-2 66-9 38102 11 049D 18008 USSR 1 JUN 700-2 66-9 38102 11 0500 1810 USSR 1 2 JUN 700-2 66-9 38102 11 0500 1810 USSR 1 2 JUN 700-3 3820 11		17998	Sn		ELEME	S NOT	VAILABLE		
043D CHARLE 18008 US 15 MAY ELEMENTS NOT AVAILABLE 043F 18009 US 15 MAY ELEMENTS NOT AVAILABLE 043F 18024 US 15 MAY ELEMENTS NOT AVAILABLE 043G 18025 US 15 MAY ELEMENTS NOT AVAILABLE 048A 18025 US 15 MAY ELEMENTS NOT AVAILABLE 048A 18026 USSR 4 JUN 770-2 66-5 38700 049A 1808B USSR 4 JUN 770-2 66-5 38700 1 049A 1808B USSR 4 JUN 770-2 66-5 38700 1 049B 1808B USSR 4 JUN 770-3 66-5 38700 1 049B 181B USSR 12 JUN 770-3 74-0 1478 1 050D 181B USSR 12 JUN 770-3 74-0 1478 1 051D COSMOS 1854 181B USSR 10 JUN <td></td> <td>16007</td> <td>SO</td> <td></td> <td>ELEME</td> <td>S NOT</td> <td>VAILABLE</td> <td></td> <td></td>		16007	SO		ELEME	S NOT	VAILABLE		
0.4.3E 18.009 US 15 MAY ELEMENTS NOT AVAILABLE 0.4.3E 18.01 US 15 MAY ELEMENTS NOT AVAILABLE 0.4.3F 180.26 US 15 MAY ELEMENTS NOT AVAILABLE 0.4.3H 180.25 US 15 MAY ELEMENTS NOT AVAILABLE 0.4.3H 180.25 US 15 MAY ELEMENTS NOT AVAILABLE 0.4.3H 180.25 USS 4 JUN 709.2 66.9 38112 0.49A 180.0S USSR 4 JUN 709.2 66.9 38112 0.49A 180.0S USSR 12 JUN 700.2 74.0 79.1 0.50A COSMOS 1854 18113 USSR 12 JUN 707.3 3836.7 11.0 0.51A COSMOS 1854 18115 USSR 10 JUN 715.8 74.0 1475 0.51A COSMOS 1854 18115 USSR 10 JUN 715.8 74.0 1475 0.51A COSMOS 1854 18115 USSR 10 JUN		18008	SN		ELEME	S NOT	VAILABLE		
0.4.3F 18010 US 15 MAY ELEMENTS NOT AVAILABLE 0.4.3G 0.4.3G 18024 US 15 MAY ELEMENTS NOT AVAILABLE 0.4.3G 18025 USSR 4 JUN 770-0 6.5 38700 1 0.48A COSMOS 1807 USSR 4 JUN 770-0 6.6 38112 1 0.49D COSMOS 1850 USSR 4 JUN 770-2 6.6 38112 1 0.49D COSMOS 1851 18096 USSR 9 JUN 770-3 6.3 3812 1 0.50D COSMOS 1852 12 JUN 770-3 6.3 38367 1 0.51D COSMOS 1852 12 JUN 770-3 6.3 38367 1 0.51D COSMOS 1854 18113 USSR 10 JUN 770-3 6.3 38367 1 0.51D COSMOS 1852 18113 USSR 10 JUN 770-0 74-0 7		18009	SO		ELEME	S NOT	VAILABLE		
0.4.3.G 10.0.24 U.S 15 MAY ELEMENTS NOT AVAILABLE 0.4.3.H 0.4.3.H 180.25 U.S.SR 4 JUN 710.0 66.5 381.12 1. 0.4.6.D 0.4.6.H 180.6.5 U.S.SR 4 JUN 710.0 66.5 381.12 1. 0.4.6.D 0.4.6.D 180.6.5 U.S.SR 4 JUN 710.0 66.5 381.12 1. 0.4.6.D 0.5.6.D 180.05 U.S.SR 1.0 100.7 74.0 797 0.5.0.A 0.5.6.D 181.03 U.S.SR 1.2 JUN 716.6 6.3.2 38367 1.1 0.5.0.B 0.5.0.B 181.13 U.S.SR 1.2 JUN 715.6 74.0 1497 1.1 0.5.1.B 0.5.0.B 181.13 U.S.SR 1.6 JUN 115.4 74.0 1475 1.1 0.5.1.B 0.5.0.B 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0			s o		ELEME	S NOT	VAILABLE		
64.3H COSMOS 1849 18025 US 15 MAY ELEMENTS NOT AVAILABLE 18020 USSR 4 JUN 779.0 66.5 38700 1. 04.8D COSMOS 1849 180086 USSR 4 JUN 7706.2 66.9 38112 1. 04.9D COSMOS 1850 180096 USSR 9 JUN 100.5 74.0 801 1. 05.0D COSMOS 1851 18110 USSR 12 JUN 770.3 63.2 37851 1. 05.0D COSMOS 1853 18111 USSR 16 JUN 115.4 74.0 1497 1. 05.1D COSMOS 1853 18111 USSR 16 JUN 115.4 74.0 1478 1. 05.1D COSMOS 1854 18110 USSR 16 JUN 115.4 74.0 1475 1. 05.1D COSMOS 1855 18111 USSR 16 JUN 114.4 74.0 1475 1. 05.1D COSMOS 1856 18110 USSR 1		18024	Sn		ELEME	S NOT	VAILABLE		
0468A COSMOS 1849 18083 USSR 4 JUN 719.0 66.5 38700 1 0460A COSMOS 1850 18096 USSR 4 JUN 706.2 66.9 38112 1 0490 COSMOS 1850 18096 USSR 12 JUN 100.5 74.0 797 050A COSMOS 1851 18113 USSR 12 JUN 716.8 63.2 33857 1 051B COSMOS 1853 18114 USSR 16 JUN 715.8 74.0 1497 1 051B COSMOS 1854 18114 USSR 16 JUN 115.4 74.0 1475 1 051C COSMOS 1854 18117 USSR 16 JUN 115.4 74.0 1475 1 051C COSMOS 1855 18117 USSR 16 JUN 115.4 74.0 1475 1 051C COSMOS 1854 18118 USSR 10 JUN 114.8 74.0 1475 1 051	043H	18025	SO	_	ELEME	NOT	Ī		
046D COSMOS 1860 USSR 4 JUN 706.2 66.9 38112 11 0440 COSMOS 1850 18086 USSR 4 JUN 100.5 74.0 901 0490 COSMOS 1851 18103 USSR 12 JUN 707.3 63.2 33867 1 050A COSMOS 1851 18113 USSR 12 JUN 707.3 63.2 33867 1 051A COSMOS 1853 18113 USSR 16 JUN 115.4 74.0 1497 1 051C COSMOS 1854 18115 USSR 16 JUN 115.4 74.0 1497 1 051C COSMOS 1856 18117 USSR 16 JUN 115.4 74.0 1475 1 051C COSMOS 1856 18118 USSR 16 JUN 114.6 74.0 1475 1 051A COSMOS 1856 18118 USSR 16 JUN 114.6 74.0 1475 1 051A COSMOS 1856	048A COSMOS	18083	USSR		719.0	66.5	38700	1714	
0.0494 COSMOS 1850 18092 USSR 9 JUN 100.7 74.0 801 0.0498 COSMOS 1851 18104 USSR 12 JUN 710.8 63.2 38367 11 0.050	0480	18086	assn:		706.2	6.99	38112	1669	
0504 COSMOS 1851 180090 USSR 12 JUN 110.05 74.0 1497 11 10.05 10 1	049A CUSMUS	18045	2000	-	1.001	2	100		
0500 COSMOS 1851 1810 USSR 12 JUN 710.8 03.2 3830 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	9640	16060	2000		100.0	0.6	200	60.	
0514 COSMOS 1852 18113 USSR 16 JUN 115.4 74.0 1497 11 0515 COSMOS 1854 18115 USSR 16 JUN 115.4 74.0 1476 11 0516 COSMOS 1855 18115 USSR 16 JUN 115.1 74.0 1476 11 0516 COSMOS 1856 18117 USSR 16 JUN 115.1 74.0 1476 11 0517 COSMOS 1856 18117 USSR 16 JUN 114.8 74.0 1475 11 0518 COSMOS 1856 18119 USSR 16 JUN 114.8 74.0 1475 11 0519 COSMOS 1859 18120 USSR 16 JUN 114.4 74.0 1475 11 0524 COSMOS 1850 18121 USSR 16 JUN 117.8 74.0 1476 11 0525 COSMOS 1850 18122 USSR 18 JUN 110.8 98.8 805 0536 COSMOS 1861 USSR 18 JUN 110.8 98.8 805 0537 1812 USSR 23 JUN 110.3 98.8 776 0540 USSR 23 JUN 110.3 98.8 776 0540 USSR 23 JUN 110.3 98.8 776 0554 COSMOS 1862 USSR 23 JUN 110.5 05.0 990 0554 COSMOS 1864 USSR 23 JUN 110.5 05.0 990 0555 USSR 18130 USSR 23 JUN 110.5 05.0 990 0556 USSR 18150 USSR 23 JUN 110.5 05.0 990 0557 USSR 18150 USSR 23 JUN 110.5 05.0 990 0558 USSR 23 JUN 110.5 05.0 990 0559 USSR 23 JUN 110.5 05.0 990 0550 USSR 23 JUN 110.5 05.0 990	OSOA COSMOS	18103	3000	•	10.6	03.5	10000		
0518 COSMOS 1853 18114 USSR 16 JUN 115.4 74.0 1460 15 051C COSMOS 1856 18115 USSR 16 JUN 115.4 74.0 1475 15 051C COSMOS 1856 18115 USSR 16 JUN 115.4 74.0 1475 15 051C COSMOS 1856 18117 USSR 16 JUN 114.9 74.0 1475 15 051G COSMOS 1856 18119 USSR 16 JUN 114.9 74.0 1475 15 051G COSMOS 1859 18120 USSR 16 JUN 114.6 74.0 1475 15 051J COSMOS 1850 18120 USSR 16 JUN 114.6 74.0 1475 15 052A COSMOS 1850 18121 USSR 18 JUN 104.0 65.0 987 16 053A COSMOS 1861 18122 USSR 18 JUN 100.8 98.8 776 18122 USSR 23 JUN 100.3 98.8 776 18129 USSR 23 JUN 100.3 98.8 776 18129 USSR 23 JUN 105.0 98.8 776 18131 USSR 23 JUN 105.0 97.4 82.9 991 18131 USSR 23 JUN 105.0 97.4 82.9 991 18131 USSR 23 JUN 105.0 97.4 82.9 1019	0000	0 7 6	2000	•	10/0/	2.50	16076	1041	
051C COSMOS 1854 18115 USSR 16 JUN 115-1 74-0 1478 15 1 15 1 15 1 1 14-9 74-0 1475 15 1 1 15 1 1 14-9 74-0 1475 15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	OFIE COMOS	4 - 1 - 2 - 1	200	•	115.6	74.0	1450	1441	
0510 COSMOS 1855 18117 USSR 16 JUN 115-1 74-0 1475 1 0516 COSMOS 1856 18117 USSR 16 JUN 114-9 74-0 1475 1 0516 COSMOS 1859 18119 USSR 16 JUN 114-6 74-0 1475 1 0517 COSMOS 1859 18119 USSR 16 JUN 114-6 74-0 1475 1 0519 COSMOS 1860 USSR 18 JUN 114-6 74-0 1476 1 0519 COSMOS 1860 USSR 18 JUN 114-6 74-0 1476 1 0519 COSMOS 1860 USSR 18 JUN 101-8 98-8 776 1 0530 USSR 18 JUN 100-8 98-8 776 1 0530 USSR 23 JUN 100-3 98-8 776 1 0540 COSMOS 1861 USSR 23 JUN 106-0 82-9 991 1 0554 COSMOS 1862 USSR 23 JUN 105-0 82-9 991 1 0555 COSMOS 1864 USSR 23 JUN 105-0 82-9 1019 1 0557 COSMOS 1864 USSR 23 JUN 105-0 82-9 1019 1 0557 COSMOS 1864 USSR 23 JUN 105-0 82-9 1019 1 0557 COSMOS 1864 USSR 23 JUN 105-0 82-9 1019 1 0557 COSMOS 1864 USSR 23 JUN 105-0 82-9 1019 1	OSIO COSMOS	51161	ds sp	•	115.3	74.0	1478	1457	
051E COSMOS 1856 18117 USSR 16 JUN 114.9 74.0 1475 1 051G COSMOS 1856 18119 USSR 16 JUN 114.6 74.0 1475 1 051G COSMOS 1859 18119 USSR 16 JUN 114.6 74.0 1476 1 051J COSMOS 1869 18121 USSR 16 JUN 117.8 74.0 1476 1 051J COSMOS 1860 18121 USSR 16 JUN 117.8 74.0 1476 1 052A COSMOS 1860 18122 USSR 18 JUN 101.8 98.8 975 053A 18123 US 20 JUN 100.8 98.8 776 053G 18129 USSR 22 JUN 100.3 98.8 776 053G COSMOS 1861 18130 USSR 23 JUN 100.3 98.8 776 054G COSMOS 1861 18130 USSR 23 JUN 104.9	OSID COSMOS	18116	USSR		115.1	74.0	1475	1444	
051F COSMOS 1867 18118 USSR 16 JUN 114.8 74.0 1475 1 051G COSMOS 1869 18119 USSR 16 JUN 114.6 74.0 1476 1 051J COSMOS 1869 18121 USSR 16 JUN 117.8 74.0 1476 1 051J COSMOS 1860 18121 USSR 16 JUN 117.8 74.0 1476 1 052A COSMOS 1860 18122 USSR 18 JUN 104.0 65.0 98.8 1686 1 053A COSMOS 1860 18124 USSR 20 JUN 100.8 98.8 776 053G L812A US 20 JUN 100.3 98.8 776 053G L812A USSR 23 JUN 100.3 98.8 776 054G COSMOS 1861 18130 USSR 23 JUN 104.9 82.9 991 055A COSMOS 1864 1818 USSR 23 JUN <	OSIE COSMOS	18117	USSR	•	114.9	74.0	1475	1429	
051G COSMOS 1858 18119 USSR 16 JUN 114.6 74.0 1476 1 051J COSMOS 1859 18120 USSR 16 JUN 117.8 74.0 1474 1 051J LB121 USSR 16 JUN 117.8 74.0 1474 1 052A COSMOS 1860 18122 USSR 18 JUL 103.7 65.0 987 1 052D 18241 USSR 18 JUL 103.7 65.0 987 1 053D 18123 US 20 JUN 101.8 98.8 776 053G 18124 US 20 JUN 100.8 98.8 776 053G 18124 US 20 JUN 100.3 98.8 776 053G 18124 US 20 JUN 100.3 98.8 776 053G 18154 US 20 JUN 100.3 98.8 776 0548 COSMOS 1861 18130 USSR	051F COSMOS	18118	USSR	-	114.8	74.0	1475	1415	
051H COSMOS 1859 18120 USSR 16 JUN 114.4 74.0 1474 1 051J 18121 USSR 16 JUN 117.8 74.0 1666 1 052A COSMOS 1860 18122 USSR 18 JUL 103.7 65.0 987 1 052D 18241 USSR 18 JUL 103.7 65.0 987 1 053B 18123 US 20 JUN 100.8 98.8 852 053C 18124 US 20 JUN 100.8 98.8 776 053C 18129 US 20 JUN 100.3 98.8 776 053C 18129 USS 20 JUN 100.3 98.8 776 054B 18130 USSR 23 JUN 104.9 82.9 996 055A COSMOS 1862 18130 USSR 23 JUN 105.0 92.9 991 055A COSMOS 1864 18150 USSR 23 JUN <td>051G C0SM0S</td> <td>18119</td> <td>USSA</td> <td>ø</td> <td>114.6</td> <td>74.0</td> <td>1476</td> <td>1399</td> <td></td>	051G C0SM0S	18119	USSA	ø	114.6	74.0	1476	1399	
051J L81Z1 USSR 16 JUN 117.8 74.0 1686 1 052A COSMOS 1860 181Z2 USSR 18 JUL 103.7 65.0 987 98.7 053A 181Z3 US 20 JUN 101.8 98.8 852 053B 181Z3 US 20 JUN 100.8 98.8 776 053C 181Z9 US 20 JUN 100.3 98.8 776 053D 181Z9 USS 20 JUN 100.3 98.8 776 054B 181Z9 USSR 23 JUN 104.7 82.9 996 054B 1813 USSR 23 JUN 104.7 82.9 991 055A COSMOS 1864 18131 USSR 23 JUN 106.7 82.9 991 055A COSMOS 1864 18150 USSR 23 JUN 106.7 82.9 991 055A COSMOS 1864 18150 USSR 23 JUN 106.9 <td< td=""><td>051H C0SM0S</td><td>18120</td><td>USSR</td><td>ø</td><td>114.4</td><td>74.0</td><td>1474</td><td>1385</td><td></td></td<>	051H C0SM0S	18120	USSR	ø	114.4	74.0	1474	1385	
052A COSMOS 1860 18122 USSR 18 JUL 103-7 65-0 987 052D 18241 USSR 18 JUL 103-7 65-0 956 053A 18123 US 20 JUN 101-8 98-8 852 053B 18129 US 20 JUN 100-3 98-8 776 053C 18129 US 20 JUN 100-3 98-8 776 054B US 20 JUN 100-3 98-8 776 054C USSR 23 JUN 100-3 98-8 776 054C USSR 23 JUN 104-7 82-9 991 055A COSMOS 1862 18131 USSR 23 JUN 105-0 82-9 991 055A COSMOS 1864 18152 USSR 23 JUN 105-0 92-9 991 055A COSMOS 1864 18150 USSR 23 JUN 106-0 97-4 82-9 1019 055A COS		18121	USSR		117.8	74.0	1686	1474	
052D 18241 USSR 18 JUL 103.7 65.0 956 053A 18123 US 20 JUN 101.8 98.8 852 053B 18127 US 20 JUN 100.8 98.8 852 053C 18129 US 20 JUN 100.3 98.8 776 054A COSMOS 1861 18129 USSR 23 JUN 104.9 98.8 776 054C 1813 USSR 23 JUN 104.7 82.9 991 055A COSMOS 1862 1813 USSR 23 JUN 105.0 82.9 991 055A COSMOS 1864 18152 USSR 23 JUN 105.0 82.9 1019 055A COSMOS 1864 18160 USSR 6 JUL 104.7 82.9 1003	052A COSMOS	18122	USSR	œ	104.0	0.59	186	906	
0538 18127 US 20 JUN 100.8 98.8 852 0530 18127 US 20 JUN 100.8 98.8 776 0530 1854 CGSMGS 1861 18129 USSR 23 JUN 104.9 82.9 991 0546 CGSMGS 1862 1853 USSR 23 JUN 105.0 82.9 991 0554 CGSMGS 1862 USSR 23 JUN 105.0 82.9 991 0557 CGSMGS 1864 18152 USSR 23 JUN 105.0 82.9 1019		18241	USSR	00	103.7	65.0	956	\$ 06	
053G 053G 053C 053C 053C 054A 055A 055A 055A 055A 055A 055A 055A		18123	SO	0	101.8	98.8	852	169	
053C 18128 US 20 JUN 100.3 98.8 776 18154 US 20 JUN 100.3 98.8 776 776 776 776 776 776 776 776 776 77		18127	Sn	0	100.8	98.8	808	788	
053D 18124 US 20 JUN 100.3 98.8 776 054A COSMOS 1861 18129 USSR 23 JUN 104.9 82.9 996 996 054B 18130 USSR 23 JUN 104.7 82.9 991 0554C 1862 18152 USSR 1 JUL 97.4 82.5 649 1019 057A COSMOS 1864 18160 USSR 6 JUL 104.7 82.9 1003	0	18128	SO		100.3	98.8	776	169	
054A CGSMGS 1861 18129 USSR 23 JUN 104.9 82.9 996 054B 18130 USSR 23 JUN 104.7 82.9 991 054C 23 JUN 105.0 82.9 1019 055A CGSMGS 1862 18152 USSR 1 JUL 97.4 82.5 649 057A CGSMGS 1864 18160 USSR 6 JUL 104.7 82.9 1003	0	18154	SO		100.3	98.8	776	767	
0548 054C 0554C 0554C 0555A 0556A 05	054A COSMOS 18	18129	USSR		104.9	82.9	966	981	
054C 1019 105A 23 JUN 105.0 82.9 1019 055A COSMOS 1862 18152 USSR 1 JUL 97.4 82.5 649 057A COSMOS 1864 18160 USSR 6 JUL 104.7 82.9 1003	0	18130	USSR	m	104.7	82.9	166	965	
7 055A COSMOS 1862 18152 USSR 1 JUL 97.4 82.5 649 61 7 057A COSMOS 1864 18160 USSR 6 JUL 104.7 82.9 1003 95		18131	USSR	m	105.0	82.9	1019	972	
87 057A CDSMDS 1864 18160 USSR 6 JUL 104.7 82.9 1003 9	7 055A COSMOS	18152	USSR	-	7	N	649	614	
	87 057A COSMOS	9	USSR		4	N	1003	956	

INTER-					-				
NATIONAL		CATALOG			PERIOD	INCL I-	APOGEE	PERIGEE	TRANSMITTING
DESI GNATION	NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NAT I ON	KM.	ĸ.	FRE Q. (MHZ)
1987 LAUNCHE	HES (CONT.)								
1987 0578		18161	USSR	\$ JUE	104.6	82.9	666	952	
1987 060A		-	S	10 JUL	100.7	S)	803	779	
	COSMOS 1869	1	USSR	16 JUL	97.3	82.5	648	614	
		18215	บรรล		97.5	82.5	929	621	
		19033	USSR	1 AUG	115.5	102.0	1498	1457	
	METEOR 2-16	18312	USSR		104.0	82.6	957	938	
		18313	USSR	80	104.0	82.6	926	937	
		18316	NAGAL		1436.0	0.0	35806	35768	
	EKRAN 16	18328	USSR		1492.5	2.7	36909	36858	
987		18331	USSR	4 SEP	1420.4	2.6	35578	35379	
		18332	USSR		476.8	46.6	27464	214	
		18334	USSR	7 SEP	113.7	82.6	1408	1383	
		18335	USSR		114.0	82.6	1412	1407	
	COSMOS 1877	18336	USSR	7 SEP	113.9	82.6	1408	1405	
	COSMOS 1878	18337	USSR	7 SEP	113.9	82.6	1408	1399	
1987 074E	COSMOS 1879	18338	USSR	7 SEP	113.8	82.6	1408	1394	
1987 074F	COSMOS 1880	18339	USSR	7 SEP	113.8	82.6	1408	1389	
1987 0746		18340	USSR	7 SEP	114.6	82.6	1470	1407	
1987 078A	AUSSAT K3	18350	AUSTRL	16 SEP	1436.1	0.0	35796	35778	
1987 0788	ECS 4	18351	ESA		1436.1	0.0	35872	35702	
1987 078C		18352	ESA		323.6	7.1	18288	179	
1987 079A	COSMOS 1883	18355	USSR		675.7	65.6	19150	19108	
	COSMOS 1884	18356	JSSR	16 SEP	675.7	65.6	19155	19103	
	COSMOS 1885	18357	USSR	16 SEP	675.7	65.6	19155	19102	
		18360	USSR	16 SEP	674.7	65.6	19140	19068	
		18374	USSR	16 SEP	339.7	65.4	18881	614	
		18375	USSR	16 SEP	339.6	65.3	18872	959	
-		18361	SO	16 SEP	107.2	90.3	1178	1013	
987		18362	SO		107.2	90.3	1181	1012	
987		19363	SO		107.2	90.3	1180	1013	
		18365	SO		107.0	90.3	1168	1009	
		18530	SO	ø	106.4	4.06	1121	966	
786		18561	s :		107.1	90.3	1166	101	
		18562	s i	_	107.8	90.2	1267	80	
1987 084A	COSMOS 1688	48581	3885	1 001	1430.2	• • •	35826	35750	
0	TOUR TOUR		200	4 4	6 40		9 6 6	6	
087	9	10401	800		104.7	92.0	1024	A # 0	
	COSMOS 1802	16481	05511		0.7	82.5	249	612	
087		18407	assa		07.5	20.00		129	
987		18441	S	26 OCT	שי	S	AILA	;	
1987 391A	COSMOS 1894	18443	USSR	_	1436.1	1.7		35783	
		18446	USSR			1.7	35876	35698	
		18448	USSR		599.4	46.8	34204	1.35	
	TVSAT 1	18573	FRG		1452.5	0.1	36168	36045	
1987 096A	S	18	USSR		436		35808	35773	
		18	USSR	26 NOV	431	1.4	35796	35607	
1987 097A		18583	SO		ELEMENTS	NOT	AVAILABLE		
1987 0978		18584	ns	29 NOV	ELEMENT	NOT	AVAILABLE		
0 98	COSMOS 1898	18585	USSR		100.6	74.0	804	277	

1452 1427 1412 1396 1461 1453

1459 1458 1459 1686 1687 1687

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INTER- NATIONAL DESIGNATIO	ON NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREG • (MHZ)
1988 LAUN	LAUNCHES (CONT.)								
0710 886		18949	USSR	11 MAR	9.569	63.2	37527	1726	
9 01	SPACENET 3R	18951	SN	X	1436.2	0.0	35791	35785	
988 0188	TELECOM 1C	18952	FRANCE		1436.1	0.0	35795	35779	
988 018C		18953	ESA	_	570.3	7.0	32539	266	
A610 886	COSMOS 1932	18957	บรรห	4	104.4	65.0	1009	920	
988 0190		19162	USSR	3	104.0	65.0	416	921	
	COSMOS 1933	18958	USSR		97.3	82.5	**	617	
		18959	USSR		97.5	82.5	650	623	
	IRS-1A	18960	VIONI		103.1	0.80	913	468	
		18961	USSR		102.8	98.9	928	853	
	MOLNIYA 1-72	18980	USSR	17 MAR	717.8	9.49	39354	1000	
988		18983	USSR		731.6	64.8	15004	# 1 10 (
	COSMOS 1934	18985	USSP		104.6	0.50	5001	7 40	
		18986	USSR		104.5	83.0	566		
	GORIZONT 15	19017	488D		1436.2	1.2	35811	35765	
		19020	USSR		1472.7	1.3	36602	36396	
		19036	USSR		**0*0	40.4	30344	166	
		19037	488D		621.6	7.97	35148	0 1	
	COSMOS 1937	19038	USSR		100.5	74.0	800	765	
		19039	USSR		100.4	74.0	798	756	
	COSMOS 1939	19045	USSR		6.96	97.8	629	266	
988		19046	USSR		4.70	8.70	800	0 .	
988		19070	s o		2.801	2.00	1302	1012	
		19071	s 0	26 APK	100.0	0.00	1300	1015	
0 0		19077) U		6.40	E - 00	1282	1007	
1966 0336		19078) <u>.</u>		107.6	9 00	1235	866	
0 0		19140))		108.2	£.06	1274	1008	
		19181	sn		109.2	90.2	1384	993	
988	COSMOS 1940	19073	USSR		1430.6	1.2	35779	35579	
		19076	USSR		1438.5	1.2	35962	35704	
	w.l	19082	USSR		639.3	48.6	36022	387	
		19083	USSR		9.649	47.3	36714	223	
1988 036A	L EKRAN 18	19090	USSR	6 MAY	1513.5	2.1	37368	37207	
1988 036E	F-1	19094	USSR		1424.1	2.0	35662	35441	
1988 039A	A COSMOS 1943	19119	USSR		101-9	71.0	856	835	
1988 0398	T.	19120	USSR	15 MAY	101.6	71.0	820	813	
1988 039C		19125	USSR		104-6	71.0	1111	839	
1988 0390		19126	USSR		104.7	71.0	1119	842	
1988 0395	111	19127	USSR	15 MAY	105.1	71.0	1157	841	
1988 039F	l.	19128	USSR		105.1	71.0	1153	845	
1988 040A	A INTELSAT 5A F-13	19121			1436.1	0.0	35799	35775	
1988 0408		19122	ESA		635.1	7.7	35700		
1988 043A	COSMOS	19163	USSR		675.7	64.9	19147	19111	
1988 0438	COSMOS	19164	USSR	_	675.7	64.9	19139	19119	
1988 0430	C COSMOS 1948	19165	USSR	_	675.7	6.40	19138	19120	
1988 043F	· tı	19168	USSR	_	674.5	64.9	19113	19082	
	19	19169	USSR	_	m	ġ.	18808	669	
en		_	USSR		0	65.3	18801	017	
1988 0444	A MOLNIYA 3-32	19189	USSR	26 MAY	7.7.7	64.5	39310	1038	

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INTER-	. 1	CATALOG			01010		11000	i i	
DESI GNATION	TION NAME	NUMBER	SOURCE	LAUNCH	MINUTES	MATION	KM.	KM.	FREG. (MHZ)
1988 LAL	LAUNCHES (CONT.)								
1988 0448	Pa	19190	0550	76 MAY	0.886	4			
10	0A CDSMOS 1950	19195	asso	, ,	116.0	9.4.2	15.20	707	
1988 0468		19196	asso		116.0	0 · M	1515	1482	
1988 050A	0A COSMOS 1953	19210	USSR		9.26	82.5	651	51.5	
988		19211	USSR		97.5	82.5	657	620	
	METEOSA	19215	ESA	15 JUN	1437.9	0.7	35873	35771	
		19216	sn	15 JUN	686.7	56.8	37717	1093	
988	1C PAS-1	19217	sn	15 JUN	1436.2	0.0	35799	35779	
	10	19218	ĘSĄ		452.5	10.0	26070	221	
986	4) (. 1-	19219	ESA		613.9	6.6	34859	236	
n 0	A. (19220	ESA	-	511.6	6.6	29360	526	
10 C	: و	19857	ESA		633.1	9.9	35477	613	
9 6		19651	ESA		632.1	0 . 8	35201	940	
0 0		19223	Sn		108.9	0*06	1196	1152	
	SA CUSMUS 1954	19256	USSR		100.6	74.1	800	773	
1 900 0000	0 (19251	USSR		100.5	74.1	798	763	
0 0	2	19260	USSR		100.6	74 - 1	704	781	
		19261	2880			74.1	799	780	
	DA UNEAN 1	19274	USSR		97.4	82.5	648	617	
0 00	AA SOBOHO A	19275	2550	٠.	97.5	82.5	656	623	
	500	10261	200		KANS	IRANS-MARS TRAJECTORY	ECTORY		
	ON DHOROS 2	78261	2000	_	HELIOC	HELIOCENTRIC ORBIT	BIT		
986		19291	1000	ול אל היי היים היים היים היים היים היים היים	-SANS-		ECTORY		
	2A COSMOS 1959	19324	8550		104 7	AELIUCENIKIC UKB	_	į	
		10325	2000		***		7001	400	
	3A INSAT IC	00000	ATOM!		1 4 4 4 1	, c	# 4 C	566	
988	ECS 5	19331	ESA			7 0	30000	19705	
1988 0630) <u>(</u>	10332	¥ 5 H		506.2	•	77760	*0010	
	XE.	20127	ESA		0.000	• •	36713	752	
1988 063F	*	20488	ESA		355.2	2.5	20231	240	
	4A METEOR 3-2	19336	USSR		109.3	82.5	1206	1180	
		19337	USSR		109.3	82.5	1204	1181	
986	- 065AF		USSR	28 JUL			50≎		
986	5A COSMOS 1961	19344	USSR	1 AUG	1436.2	0.8	35813	35762	
1988 0000	90	19347	A550	1 AUG	1459.6	9	36399	36092	
	2	19548	3000	- (464.0	47.0	26673	772	
		22541	200	v	717.6	9.40	39810	535	
	A COBIZONI 14	19390	200	,	730.9	64.7	40555	944	
	1 NO 7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	79591	200	20	1436.2	9 •0	35613	35764	
	5 u	00461	8880	œ (1432.0	9 •0	35797	35616	
	חַ עַּ	10461	USSR		600.1	46.7	34244	131	
		20461	USSE	a 0	357.8	46.7	20449	181	
1000 0144	(1	61461	y (-	107.4	89.9	1176	1031	
	D (02461	\$:	D 1	107.3	60.0	1173	1033	
	ı ç	12661	n u		107.4	80.0	1176	1033	
9 6	, ii	61661	n u	P #	107.3	60.0	1173	1025	
- 60	يا لي	19550	n v	25 AUG	107.2	6.08	1166	1027	
	ة م	19577	6 S	25 416	10/05	4 6	1170	1027	
,	•	•	,	ס	7 - 7	0.0%	1107	1033	

OBJECTS IN ORBIT

			200	BJECIS IN URBIN					
NATIONAL		CATALOG			001010	- L	ADUGEE	0 5 0 1 6 5 6	TOANSMITTING
DESIGNATION	ON NAME	NUMBER	SOURCE	LAUNCH	MINUTES	NATION		X.	FREG. (MHZ)
1988 LAUN	LAUNCHES (CONT.)								
1988 0764	COSMOS 1966	10445	9550	2014 05	718.2	65.1	14871	1.081	
0 889		4	2000	00 V 0E	705.5	4	405 at	1 4 4 2	
		19458	SO		ELEMENT	S	AVAILABLE	•	
		19459	Sn		ELEMENTS	S	AVAILABLE		
1988 077C		19490	Sn		ELEMENTS		AVAILABLE		
1988 078A		19460	Sn	5 SEP	ELEMENTS	NOT	AVAILABLE		
1988 0788	_	19461	ns	5 SEP	ELEMENTS	NOT	AVAILABLE		
1988 080A	FENGYUN 1	19461	PRC		102.7	99.2	939	832	
1988 080B		19468	PRC	6 SEP	102.7	99.5	968	875	
1988 081A		19483	SN		1436.2	2.9	35816	35759	
0		19484	ns			0.0	35790	35780	
1988 CB1C		19485	ESA	8 SEP	520.0	7.1	29816	268	
1988 C85A		19501	USSR	16 SEP	675.7	65.4	19157	19101	
1989 0858	1 COSMOS 1971	19502	USSR	16 SEP	675.7	65.4	19160	19098	
	: COSMOS 1972	19503	USSR	16 SEP	675.7	65.4	19145	19113	
		19505	USSR		6.479	4.59	19123	19093	
1988 085F		19535	USSR	16 SEP	339.3	65.1	18890	580	
		19537	USSR	16 SEP	339.3	6.49	18894	578	
	CS-38	19508	JAPAN	16 SEP	1436.1	0.0	35791	35784	
		19558	JAPAN	ø	629.3	27.9	35800	95	
	NOAA 11	19531	Sn	4	101.9	0.66	862	843	
		19532	Sn	4	100.5	6.86	788	778	
		19534	Sn		6*66	98.9	758	750	
	MOLNIYA 3-33	19241	USSR		717.8	9.49	39765	265	
		19544	USSR		698.2	64.5	38763	620	
	TORS 3	19548	Sn		1436.2	0.0	35808	35771	
		19549	S	φ.	613.6	26.4	34787	294	
986		19550	SO		1433.0	0.3	35785	35665	
	COSMOS 1974	19554	USS2	3 OCT	717.8	62.7	38955	1398	
		19557	USSR	n.	705.4	63.2	38331	1413	
1988 0934	COSMUS 1975	19573	2880		4.70	82.5	000	\$10	
		12000	2000	11 00	6.74	0.00	000	950	
	040164 22	10504	8550		1 7 3 6 7 1	6.40	10235	300	
	490044	19600	855	٠ د		9	14/00 E9E4E	9	
		10961	8550		545.2	46.6	31321	138	
		19777	USSR		1470.4	0.0	36500	36409	
1988 096A	COSMOS 1977	19608	USSR		718.6	62.8	38525	1867	
1988 0960		1961	USSR		704.9	63.1	37882	1836	
1988 098A	, TDF-1	19621	FRANCE		1436.2	0-1	35799	35777	
1988 0988	_	19622	ESA	28 OCT	593.7	4.1	33740	599	
		20132	ESA	26 OCT	477.1	3.8		217	
1988 099A		19625	SO	9 NOV	ELEMENTS	FOX	7		
		19626	SO		3		AVAILABLE		
_	COSMOS 1980	19649	USSR	m	101.9	71.0	852	843	
-		19650	USSR	m	101.8	71.0	850	832	
		19656	USSR		S	71.0	1161	843	
	_	ø	\$8		S.	71.0	6	842	
~		ø	SS	23 NOV	104.9	71.0	m	843	
1986 102F		19659	USSR	23 NOV	104.7	71.0	1122	842	

DESIGNATION

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CONTROL NAME	1 N 1 K 1						į			
CORMICE CONTICE CONTICE NATION CONTICE CONTICE CONTICE	4 2 0 1 C C C		CATALOG			PERIOD	INCL I-	APOGEE	PERIGEE	TRANSMITTING
CONTINUE	DESIGNA		NUMBER	SOURCE	LAUNCH	MINUTES	NATION	KA.	KM.	FREQ. (MHZ)
07AC COSMOS 20AA USSA 14 SEP 114 + 0 82.0 140.0 07AC COSMOS 20A1 20236 USSA 14 SEP 111.0 82.0 140.0 07AC COSMOS 20A3 20236 USSA 14 SEP 111.0 82.0 140.0 07AA COSMOS 20A3 USSA 27 SEP 113.0 82.0 140.0 07AA COSMOS 20A4 20A3 USSA 27 SEP 113.0 82.0 140.0 07AA COSMOS 20A4 20A3 USSA 27 SEP 113.0 82.0 140.0 08AA COSMOS 20A3 USSA 27 SEP 113.0 82.0 140.0 08AA COSMOS 20A3 USSA 28 SEP 113.0 82.0 247.0 08AA COSMOS 20A3 USSA 28 SEP 113.0 82.0 120.0 08AB CALILEO 20A3 USSA 28 SEP 113.0 </td <td>686</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	686									
O770 CCSR052 204.2 2023.9 USSR 11 sep 113.9 82.0 100.0 O776 CCSR052 204.2 2023.9 USSR 11 sep 113.9 82.0 100.0 O776 CCSR05 204.2 2023.9 USSR 11 sep 113.9 82.0 100.0 O774 CCSR05 204.2 2023.9 USSR 12 sep 113.9 82.0 100.0 O770 CCSR05 204.2 2023.9 USSR 27 sep 100.0 396.0 O770 CCSR05 204.2 2023.9 USSR 27 sep 100.0 396.0 O770 CCSR05 204.0 2023.9 USSR 27 sep 100.0 396.0 O800 CCSR05 205.0 USSR 27 sep 115.7 6.0 396.0 O800 CCSR05 USSR 27 sep 115.7 6.2 24.7 O800 CCSCR05 USSR 27 sep 115.0 24.7		COSMOS	20234	8880	ď	7	ď	141	1041	
O7ACE COSMOS 200230 USSR 11 5 FP 11 3 FP 11 4 7 FP 10		COSMOS	20235	USSE		9.51	J۸	9 6 6	406.	
0776 COSMOS 2043 20231 USSR 14 SEP 113-9 62-6 1400 0776 COSMOS 2044 20224 USSR 14 SEP 114-7 62-6 14021 396-8 0774 COSMOS 2044 20224 USSR 27 SEP 145-2 28-1 14021 396-8 0774 COSMOS 2044 20224 USSR 27 SEP 202-9 28-1 396-8 28-1 396-8 28-1 396-8 28-1 396-8 28-1 396-8 28-1 396-8 3		COSMOS	20236	USSR	•	113.9	82.6	1408	000	
0776 CONTAL 20239 USSR 14 FSP 144-7 82-0 14-1 0770 COTAL 20224 USSR 12 SEP 1436-2 4-1 13690 9-1 0770 COTAL 20224 USSR 25 SEP 1436-2 4-1 14029 0780 CORAL 20224 USSR 27 SEP 229-0 28-0 3415 080.4 HIKEN-CORAGS 20224 USSR 28 SEP 115-7 82-0 2470 080.4 HIKEN-CORAGS 20224 USSR 28 SEP 115-7 82-0 2470 081.0 20224 USSR 28 SEP 115-7 82-0 2470 081.0 20224 USSR 28 SEP 115-7 82-0 2470 081.0 20224 USSR 28 SEP 1431-2 0-3 3450 081.0 20224 USSR 28 SEP 1431-2 0-3 3450 081.0 20229 USSR 28		COSMOS	20237	USSR	4	113.9	82.6	0041	1405	
OTATA C0254 US 25 SFD 1456.2 4.1 35899 3 0778 HOLNIYA I-76 20254 USSR 25 SFD 229.0 6.1 14021 0780 C0780 USSR 27 SFD 229.0 0.3 39969 079A C0261 USSR 27 SFD 0.9 0.3 39969 079A C0340 USSR 27 SFD 0.9 0.3 39969 080A HITER-C05H0S 20 C021 USSR 28 SFD 115.7 0.2 2470 080A HITER-C05H0S 20 C021 USSR 28 SFD 1431.2 0.3 3582 3 081F GORIZANI 19 C07 CERENTS 0.3 3582 3 0.3 3582 3 0.3 3582 3 0.3 3582 3 0.3 3582 0.3 3592 0.3 3592 0.3 3592 0.3 3592 0.3 3592 0.3 3592 0.3			20238	USSR	4	114.7	82.6	1471	1408	
773 COBARTA OLIVA I - 70 20254 US 259 SP O 1250 1402 I 1021 0740 CORRIA S OA4 20225 USSR 27 SEP 777 0 03.0 03.0 39540 0800 CORANIS 2044 20225 USSR 27 SEP 72.7 05.0 2415 0800 UNIER-COSMOS 24 20221 USSR 28 SEP 115.7 82.0 2470 0800 UNIER-COSMOS 24 20261 USSR 28 SEP 115.7 82.0 2470 0800 UNIER-COSMOS 24 20261 USSR 28 SEP 1431.3 0.3 35545 0810 GORIZANT 19 20263 USSR 28 SEP 1431.3 0.3 35745 0810 GALILEO 20221 USSR 28 SEP 1431.3 0.3 35745 0840 GALILEO 20220 USSR 28 SEP 1431.3 0.3 35745 0840 GALILEO 20220 USSR 28 SEP 1431.3 0.3 35745 0840 GALILEO 20220 USSR 28 SEP 1431.4 0.3 <td></td> <td>42</td> <td>20253</td> <td>ns</td> <td>Ø</td> <td>436</td> <td>4.</td> <td>35898</td> <td>35677</td> <td></td>		42	20253	ns	Ø	436	4.	35898	35677	
78A MCLNITA I -76 20255 USSR 27 SEP 691-0 631-0 39640 079A COSA 20259 USSR 27 SEP 691-0 631-0 39642 079A COSAMOS 204-0 20259 USSR 27 SEP 691-0 631-0 39642 080A INTER-COSAMOS 24 20261 USSR 28 SEP 115-7 620 2473 080A INTER-COSAMOS 24 USSR 28 SEP 115-7 620 2473 081D COSAMOS 2054 USSR 28 SEP 115-7 62.0 2473 081D COSAMOS 2054 USSR 28 SEP 1431-3 0-3 35924 081D COSAMOS 2054 USSR 28 SEP 1431-3 0-3 35924 084D GALLLED 20209 USS SEP 1431-3 0-3 35924 084D GALLLED 20209 USS SEP 1431-3 0-3 35924 084D GALLLED 20209 </td <td></td> <td>78</td> <td>20254</td> <td>SO</td> <td>G</td> <td>259</td> <td>28.0</td> <td>14021</td> <td>141</td> <td></td>		78	20254	SO	G	259	28.0	14021	141	
7980 COSTAGO USSSR 27 SEP 90-2-7 60-6-0 415 000-00 INTER-COSMOS 20.261 USSR 27 SEP 92-7 65-0 24.10 000-00 INTER-COSMOS 20.261 USSR 28 SEP 115-0 82-0 24.70 000-00 COSMOS USSR 28 SEP 115-0 82-0 24.70 000-00 COSMOS USSR 28 SEP 115-0 82-0 24.70 000-00 COSMOS USSR 28 SEP 1435-2 0-3 355-3 000-00 COSMOS USSR 28 SEP 1431-3 0-3 355-3 000-00 COSMOS USSR 28 SEP 1431-3 0-3 355-3 000-00 COSMOS USS 18 DOT CURRENTS NOT NATIABLE 18 DOT CURRENTS NOT NATIABLE 000-00 COSMOS USS 21 DOT 29-0 35-0 36-0 000-00 COSMOS USS 20 DOT 11436-2 30-0<			20255	USSR	~	717.6	63.0	39569	777	
0904 COSHOS 2004 20259 USSR 27 SEP 115.7 65.0 415 0804 INTER-COSHOS 24 20221 USSR 28 SEP 115.7 62.0 2473 0804 GRIZANT 19 20262 USSR 28 SEP 115.7 62.0 2473 0804 GRIZANT 19 20264 USSR 28 SEP 115.7 62.0 2473 0816 GALILEO 20264 USSR 28 SEP 115.7 62.0 2473 0840 GALILEO 20260 USSR 28 SEP 115.7 62.0 2473 0840 GALILEO 20260 USSR 28 SEP 561.0 66.2 316.0 0840 GALILEO 20200 USSR 29 SEP 561.0 66.2 316.0 0840 GALILEO 20200 USSR 20 112.0 46.2 316.0 0840 GALILEO 20200 USSR 20 112.0 46.2 316.0		06	20258	USSR		698.4	63.0	38642	751	
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MOLNIYA 1-78	MOLNIYA 1-78 20742 USSR BSB-R2 COSMOS 2096 COSMOS 2097 COSMOS 2097 COSMOS 2098 BS-3A COSMOS 2098 COSMOS 2098 COSMOS 2098 SKYNET 4C EUTELSAT 11 F1 20773 USSR SKYNET 4C EUTELSAT 11 F1 20774 USSR 20775 USSR 20776 UK EUTELSAT 11 F1 20779 PRC PRC 20791 PRC 20792 PRC 20793 PRC 20793 PRC 20793 PRC 20793 PRC 20794 USSR 20777 ESA 20777 ESA 20777 PRC 20790 PRC 20791 PRC 20793 PRC 20793 PRC 20793 PRC 20793 PRC 20794 PRC PRC 20794 PRC PRC PRC PRC PRC PRC PRC	80		82.6	1412	1380	
## NULNITA 1-78	MULNITA 1-78 MULNITA 1-78 BSB-R2 COSMOS 2096 COSMOS 2097 COSMOS 2097 COSMOS 2097 COSMOS 2098 BS-3A COSMOS 2098 COSMOS 2098 COSMOS 2098 COSMOS 2098 COSMOS 2098 COTTA COTTA COSMOS 2098 COTTA COTT	æ		95.6	1464	1411	
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COSMOS 2097 COSMOS 2097 COSMOS 2097 COSMOS 2096 BS-3A COSMOS 2096 COT73 COSMOS 2096 COT74 COSMOS 2096 COT75 COSMOS 2096 COT75 COSMOS 2096 COT77	COSMOS 2097 20767 USSR BS-3A 20771 JAPAN COSMOS 2098 20773 JAPAN COSMOS 2098 20774 USSR SKYNET 4C 20775 USSR SKYNET 4C 20777 ESA EUTELSAT II FI 20777 ESA PRC 31 20778 ESA PRC 31 20778 ESA 2078 PRC PRC 31 20778 PRC PRC 32 20790 PRC PRC 32 20791 PRC 20792 PRC 20793 PRC 20793 PRC 20794 PRC 20797 PRC 20797 PRC	23		65.0	415	402	
BS-3A BS	BS-3A 20770 USSR CGSMGS 2098 20771 JAPAN CGSMGS 2098 20774 USSR SKYNET 4C 20775 USSR SKYNET 4C 20777 ESA EUTELSAT II FI 20777 ESA 20778 ESA 20779 PRC 20791 PRC 20793 PRC 20793 PRC 20794 PRC 20797 PRC 20797 PRC 20797 PRC 20797 PRC 20797 PRC 20798 PRC	28		63.4	39630	707	
COSMOS 2098 COSMOS 2098 COTTA JAPAN 28 AUG 649:0 28:7 35784 35 COSMOS 2098 COTTA JAPAN 28 AUG 108:9 83:0 1952 SKYNET 4C COTTA USSR 28 AUG 108:7 83:0 1952 SKYNET 4C COTTA CO	EUTELSAT 11 F1 20773 JAPAN 20773 JAPAN 20774 USSR 20775 USSR 20777 ESA 20777 ESA 20778 PRC PRC 31 20779 PRC 20779 PR	28		63.5	39168	693	
COSMOS 2098 COSMOS 2098 COTTA USSR 28 AUG 108.7 83.0 1957 SKYNET 4C 20776 UK 30 AUG 1436.1 3.9 35802 35 EUTELSAT II F1 20777 ESA 30 AUG 1382.7 0.4 36912 32 20778 ESA 30 AUG 1382.7 0.4 36912 32 20778 FENGYUN 1-2 20789 PRC 32 20790 PRC 32 20790 PRC 33 SEP 100.7 99.0 804 PRC 32 20791 PRC 3 SEP 100.7 99.0 804 PRC 3 SEP 102.7 98.9 895 20793 PRC 3 SEP 102.7 98.9 895 20794 PRC 3 SEP 102.7 98.9 895 20795 PRC 3 SEP 102.7 98.9 895 20797 PRC 3 SEP 102.7 98.9 895 20847 PRC 3 SEP 102.7 98.9 895 20847 PRC 3 SEP 102.7 98.9 899 20847 PRC 3 SEP 102.7 98.9 989 20847 PRC 3 SEP 102.7 98.9 899 20847 PRC 3 SEP 102.7 98.9 989 20847 PRC 3 SEP 102.7 98.9 989 20847 PRC 3 SEP 102.7 98.9 989 20849 PRC 3 SEP 102.7 98.9 989 PRC 3 SEP 102.7 98.9 899 PRC 3 SEP 102.7 98.9 989 PRC 3 SEP 102.7 989 PRC 3 SEP 102.7 98.9 9	COSMOS 2098 20774 USSR SKYNET 4C 20775 USSR SKYNET 4C 20777 ESA EUTELSAT 11 F1 20777 ESA 20778 ESA 20778 ESA 20778 ESA 20778 ESA 20779 PRC PRC 31 20779 PRC PRC 32 20790 PRC 20791 PRC 20792 PRC 20793 PRC 20793 PRC 20794 PRC 20794 PRC 20795 PRC	10 0 N		2.0	35794	35782	
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PRC 32 20791 PRC 3 SEP 101.9 99.0 862 20791 PRC 3 SEP 103.4 98.9 960 PRC 3 SEP 103.4 98.9 960 20792 PRC 3 SEP 102.6 98.9 895 20793 PRC 3 SEP 102.7 98.9 895 20797 PRC 3 SEP 102.7 98.9 895 20797 PRC 3 SEP 102.7 98.9 891 20846 PRC 3 SEP 106.0 99.0 1203 20846 PRC 3 SEP 101.8 98.9 884 20848 PRC 3 SEP 103.3 98.9 884	PRC 32 20790 - 081CG 20791 20792 20793 20797 20797 20798) M	2.00		0	77.5	
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20797 PRC 3 SEP 102.7 98.9 892 20798 PRC 3 SEP 102.7 98.9 691 20846 PRC 3 SEP 106.0 99.0 1203 20847 PRC 3 SEP 101.8 98.9 884 20848 PRC 3 SEP 103.3 98.9 950	20797 20798 20846	m	02.7	98.9	895	873	
20798 PRC 3 SEP 102.7 98.9 691 20846 PRC 3 SEP 106.0 99.0 1203 20847 PRC 3 SEP 101.8 98.9 884 20848 PRC 3 SEP 103.4 98.9 950	20738	m		98.9	892	878	
20846 PRC 3 SEP 106.0 99.0 1203 20847 PRC 3 SEP 101.8 98.9 884 20848 PRC 3 SEP 105.6 98.9 1203 20849 PRC 3 SEP 103.3 98.9 950	20846	m		98.9	891	876	
20847 PRC 3 SEP 101.6 96.9 884 20848 PRC 3 SEP 105.6 96.9 1203 20849 PRC 3 SEP 103.3 96.9 950		M)		0.66	1203	878	
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CORPY DISC 101-13 QUEVO QUO	87807	m /	05.6	6.86	1203	F) 460	
	20849	ו מי	m.	98.9	950	976	

FOOTNOTES

- DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-297 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1961 OMICRON 1 AND 1961 OMICRON 2. OBJECTS OF THIS SERIES THAT HAVE OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
 - 149 BJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1963 0144. 1963 0148, AND 1963 014C. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT. 2
- OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-19 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1963 0474. THE OBJECT OF THIS SERIES THAT HAS DECAYED CAN BE FOUND IN THE DECAYED S P
 - 28 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUCHED WITH 1964 0064. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED TION REPORT. 4
- OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT *
- OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-51 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1965 027A.
 OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED TION REPORT.
- 6¢ DEBRIS DISCOVERED IN ORBIT WHICH HAS NOT BEEN IDENTIFIED WITH ANY LAUNCH OR COUNTRY OF ORIGIN.
- 472 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1965 0824. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT. *
- OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-110 08JECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1968 091A. FOUND IN THE DECAYED OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE TION REPORT. 8
- A MANNED SPACECRAFT WHICH SUCCESSFULLY LANDED ON THE MOON AND RETURNED TO SELENOCENTRIC ORBIT.
- 138 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1968 097A.
 OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE: FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-TION REPORT. 100
- 270 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1969 062A. 1969 082H, 1969 082J, AND 1969 082K. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-1969 0828, 1969 082C, 1969 082D, 1969 082E, 1969 082F, 1969 082G, 110
- THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SAT-368 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1970 025A AND 1970 0258. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN SUMMARY SATELLITE SITUATION REPORT. OF-THE-YEAR 12
- 103 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1970 089A. OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED ELLITE SITUATION REPORT. 130
- DEBRIS DISCOVERED IN GRBIT WHICH HAS NOT BEEN IDENTIFIED WITH ANY **₩**

164

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229 DBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1972 0584. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA+ 208 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1975 0044. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-159 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 0774. OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-OBJECT'S LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-198 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1973 0864. 150 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1974 089A. OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-120 08JECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1971 0154. OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR 46 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1970 091A. 1974 0898. AND 1974 089C. GBJECTS OF THIS SERIES THAT HAVE DECAYED CAN 70 08JECTS HAVE BEEN IDENTIFIED AS MAVING BEEN LAUNCHED WITH 1976 0674. 51 08JECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 120A. 79 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 1264. 14 OBJECT HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 105A.
OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS OF THIS SERIES THAT HAVE DECAVED CAN BE FOUND IN THE DECAVED OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS OF THIS SERIES THAT MAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED SUMMARY SATELLITE SITUATION REPORT. TION REPORT. 214 154 ***** 20≎ 224 234 \$ 5 7 254

THE OBJECT OF THIS SERIES THAT HAS DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-

70 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1977 121A.

TION REPORT.

274

TION REPORT.

TION REPORT.

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OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED

OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-172 OBJECTS MAVE BEEN IDENTIFIED AS MAVING BEEN LAUNCHED WITH 1977 0654. OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-

FOOTNOTES (CONT)

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- AND 1978 0268. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY 210 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1978 026A SATELLITE SITUATION REPORT.
- 1978 1008. AND 1978 100C. OBJECTS IN THIS SERIES THAT HAVE DECAVED CAN BE 400 08JECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED #ITH 1978 100A. FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR # 6 ~
 - 288 DBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1979 0174. OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-OBJECTS IN THIS SERIES THAT HAVE DECAVED CAN BE FOUND IN THE DECAVED SUMMARY SATELLITE SITUATION REPORT. 300
- 47 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1980 030A.
 08JECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED TION REPORT.
 - OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA+ TION REPORT. 4 1 1
- OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMATY SATELLITE SITUA-80 08JECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1980 089A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED TION REPORT. 324
- OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-69 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED #ITH 1981 0284. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED TION REPORT. 400
- OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-305 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1981 053A OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED TION REPORT. 440
- OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-33 OBJECTS MAVE BEEN IDENTIFIED AS MAVING BEEN LAUNCHED WITH 1982 115A.
 OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED DEPLOYED FROM SPACE TRANSPORTATION VEHICLE. 354 364
 - 59 0BJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1982 0554. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT. TION REPORT. 374
- OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-27 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1983 091A.
 OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED TION REPORT. 38\$
- 164 OBJECTS MAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1983 0444. OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUA-OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED #0°E
- 30 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1984 1044. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT. **₩**0.
- 46 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1984 083A. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE

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* C	*** C4 UBJECTS MAVE BEEN TOENTIFTED AS MAVING BEEN LAUNCHED WITH 1985 0824.
	OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED
	OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE
	SITUATION REPORT.

- 25 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1985 030A.
 OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED
 OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT. \$ ₩ 1
- 30 DBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1986 024A. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE ひる
- 499 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1986 0194. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT. 454
- 30 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1986 0674. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED 464

SITUATION REPORT.

- OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 90 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1986 017A... OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT. 474
- 195 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1987 004A.
 OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED
 OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT. 484
- 112 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1987 020A. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE 404
- 19 OBJECTS MAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1988 0654. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE \$0\$

SITUATION REPORT.

25 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1989 10004. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT. 514

SITUATION REPORT.

- 13 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1990 105A.

 OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED

 OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT. 524
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INTER- National	DESIGNATION	1986 017CB					1990 087E	1990 0888									1990 097A	1990 098C	1990 0980	1990 098E	1990 0986	1990 098H			1990 1028	1990 102C	1990 1064	1990 1078	1990 1088	1990 1100	1990 110E	1990 1128	1990 112C	1990 1158	1990 115C	1990 1168	1990 116C

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INTER- NATIONAL DESIGNATION					1968 017A		1970 025NC				1971 JESCH		1976 120AQ						1981 05891							1986 017CS						1989 1000		1969 1008				1990 6150		1000 0604				1990 072C	TOOL SALHII

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KAPPA 1	CAPSULE	YZZ	Sn	18 AUG	AUG	8
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NAME	S (CONT.)	DISCOVERER 32	CAPSULE			OTSCOVEDED 36					DISCOVERER 35		RANGER 2			DISCOVERER 36		OSCAR 1				S 5	L OTHOUGH			DISCOVERER 38	CAPSULE				1 000				COSMOS 1		COSMOS 2								
INTER- NATIONAL DESIGNATION	1961 LAUNCHES (CONT.)	A-GAMMA 1				A-DELIA Z	A-EPSILON 2	A-FPSILON 3		A-EPSILON 5	A-2E IA 1	A-7FTA 2	~	A-10TA 1	A-IOTA 2	A-KAPPA 1			m	A-LAMBDA 1		1962 LAUNCHES	- 43740			EPSILON 1			EPSILON 3	z o	75TA 1	-		ETA 3	THETA 1	THETA 2		N			KAPPA 6			LAMBDA 3	LAMBOA 4

			DECAYED OBJECTS				
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DESIGNATION		NAM.	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1962 LAUNCHES	LAUNCHES (CONT.)						
¥.	RANGER 4		280	SO	23 APR		\$ 5
1 DN			281	USSR	-	OC T	
NU 2			283	USSR		AUG	
	COSMOS 4		287	USSR	26 APR	APR	
			284	25.5U			
			592	asso.		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
OMICKON 1	ARIEL 1		202 9 4 C	¥ .	26 APR	24 MAY 70	
			200	n u		K 0	
. CHA			007	500	4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
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SIGMA 1			292	כנו)	
SIGMA 2			293	s n		₹	
			294	SO		3	
TAU 1	AURORA 7		295	SD		HAY	#
TAU 2			296	SO		MAY	
UPSILON 1	COSMOS 5		297	USSR	28 MAY		
UPSILON 2			298	USSR	28 MAY	15 DEC 62	
PHI 1			302	SO		Š	
PHI 2			303	SN		2	
CHI 1			304	SO		ž	
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DAFF.			~ D7	s u			
OMEGA 2			000	5 =		3	
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A AL DHA 5			6251	ñ <i>u</i>		ָ ק	
BETA 1			5.55) v		3	
A-GAMMA 1			316) v	28 JUN	SEP	
A-DELTA 1	COSMOS 6		338	asso		V OV	
A-DELTA 2			339	USSR	30 JUN	SEP	
A-2ETA 1			342	SD		25 JUL 62	
A-ZETA 2			343	SD	18 JUL	¥	
A-ETA 1			344	Sn	-	P OC	
A-THETA 1			345	s _D	28 JUL	P CC	
A-101A 1	COSMOS 7		9 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8550 3500		V C	
A-101A			- + 1	K000	מי מר	20 90W 12	
ATOTA A			0 4	X 950		\$ =	
A-KAPPA 1			360	SD	2 AUG		
A-KAPPA 2			362) 5 5		AUG	
A-LAMBDA 1			361	SO	5 AUG	AUG	
A-MU 1	VOSTOK 3		363	USSR	11 AUG	AUG	E¢
A-MU 2			364	CSSR	11 AUG	AUG	
	VOSTOK 4		365	USSR		AUG	E¢
A-NU 2			366	USSR		P O 0	
A-XI 1	COSMOS 8		2967	asso.	18 AUG	_	
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A OMICRON 2			370	Sn	23 AUG	2 MAR BO	

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NOTES

DECAY

LAUNCH

SOURCE

DECAYED OBJECTS

CATALOG NUMBER

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1962 LAUNCHES (CONT.)

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DESIGNATION	NAME		SOURCE	LAUNCH	DECAY	NOTES
1962 LAUNCH	LAUNCHES (CONT.)					
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8-101A 11		486	USSR		> 2	
		487	USSR	24 DCT	<u> </u>	
8-10TA 13		491	USSR		OE O	
-101A 1		492	USSR		OEC	
		493	USSR			
_		404	USSR		O O O	
8-101A 17		495	USSR		26 DEC 62	
8-10TA 18		496	USSR		DEC	
B-101A 19		497	USSR			
B-10TA 20		498	USSR		10 DEC 62	
8-IOTA 21		664	USSR		9 DEC 62	
		200	USSR		OE C	
B-101A 23		501	USSR		26 DEC 62	
8-101A 24		512	USSR	24 OCT	31 DEC 62	
B-101A 9		484	USSR	24 OCT	4 DEC 62	
B-KAPPA 1		***	SD	26 OCT	5 OCT 67	
B LAMBDA 1	EXPLORER 15	445	SO		DEC	
		YZZ	SO		DE C	
B-N0 1		844	USSR		2-3 NOV 62	
8-NU 2		044	USSR	NON T	Ş	
8-X1 1		451	USSR	AON 4	NON	
8-XI 2		452	USSR	AON +		
8-x1 3		454	USSR	AON *	ZYS	
8-XI 4		864	USSR	AON +	DEC	
8-X1 5		684	USSR	AON +	DEC	
B-OMICRON 1	_	453	SO	S NOV	DEC	
B-P1 1		455	Sn		>	
8-RHO 1		481	SO	24 NOV	5	
B-SIGMA 1		064	Sn	4 DEC	8 DEC 62	
8-TAU 1		205	Sn	13 DEC	9 FEB 67	
B-TAU 2	n rooni	50¢	SO	13 DEC	AUG	
8-TAU 3		507	ns		1 JUL 63	
B-TAU 4		508	Sn		ZYT	
8-TAU 5		E	s o		FEB	
8-TAU 6		520	SO		MAR	
B-6HI 1		503	s :		2	
1 154 8	IKANSII SA	506	s :		SEP	
B-ps1 2		416	SO :			
		616	SD :		ÿ	
		523	S		202	
_		7258	S		₹	
-OMEGA		517	USSR	22 DEC	30 DEC 62	
B-OMEGA 2		518	ussa	22 DEC	22 JAN 63	
1963 LAUNCHES	ĘS					
	200	- c - 4			:	
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		r 1	¥7,77	2 6 7 7	2 ()	

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10N	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1963 LAUNCHES (CONT.)						
1963 002A		525	SO	7 JAN	24 JAN 63	
1963 0028		526	NS		245	
		527	Sn :	•		
1963 0038		929	S :	۰ ۱	E9 AON 8	
		\$ 85 G	e sa	10 JAN		
		11 P. C.	s S		DEC	
		98.6	s n			
1963 005C		535	SD	0	N S S	
		536	ns		킼	
		554	USSR	21 MAR	HAR	
		555	USSR	21 MAR	APR	
963		295	SO			
008A		563	NS SR		APR	
		564	SD	3 APR	NO.	
8600		565	S)			
		790	USSR	13 APR	V C	
		80 (C)	USSR COST		3	
		D. (1	USSR Section	22 APR	APR.	
1903 0118		0/0	USSR		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
1905 UICA		100	2000	X 50 60 60 60 60 60 60 60 60 60 60 60 60 60	SO TAN OL	
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		2400	n <i>u</i>		K 0	
		7.500	s s	× ×		
		2522	s S		NAL	
		2533	s S	AM 6	Z	
		2638	S O		DEC	
1963 014AP		2793	SD	PAN 9	FEB	
		3105	SD		7 JUN 73	
		3159	SO		FEB	
		3175	SO	A MAY	MAY	
		3236	Sn		MAY	
		3241	S T		MAY	
		3245	SO:		50	
1965 0148M		3640	S 2	A 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	APR 77	
		1101	n u			
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		3255	5 5 7			
		3256) <u>-</u>		QQ V	
		3258	S			
-		3259	· S		00	
1963 014CA		3260	SO.			
		3262	SO		¥	
1963 01466		3268	SO		AUG	
1963 014CK		3330	SD	9 MAY	FEB	
		5500	Sn		23 JAN 77	
1963 014CQ		5503	SO	AM 6	ZYS	
1963 U14CR		5511	sn	O MAY	Z	

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NATIONAL	1		CATALOG				
DESIGNATION	NOIL	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1903 LAI	LAUNCHES (CONT.)						
1063 610	61406		4512	91		טניט	
9 6	01401) (S	AW 6	19 FEB 75	
	0140		5916	s o		APR	
	014CX		5954	SO	9 MAY		
	014CZ		5993	SO		AUG	
1963 014	01400		2996	SO			
1063 314	31400		5997	ns		> 0 4	
1963 01	014DE		4696	sn		NOV	
1963 015A	SA FAITH 7		576	SO	S.		F
1963 0158	58		577	Sn	15 MAY	MAY	
			573	Sn	60	¥	
	7A COSMOS 17		580	USSR		200	
	78		581	USSR			
	75		295	USSR		¥¥	
1963 0170	270		593	USSR	22 HAY	AUG	
	7E		584	USSR	22 MAY	ž	
	75		585	USSR		SEP	
			588	USSR		APR	
	018A COSMOS 18		596	USSR	S4 MAY		
	86		587	USSA		Ş	
			O 65	Sn		킼	
	020A VOSTOK 5		591	AS50	14 JUN	2	# W
	0ts		592	USSR		Z S	
			200	SD:	n i	Yne.	
	LOFTIZ		601	SD:	<u>.</u>	3	
			7.00 v	\$0	ο :	9	
	0210 RADOSE		009	SD :	<u>ر</u>		
	CZIE		598	S O :	6 1	₹ :	
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	3420		200) ·		F F F	
	025A		609) N			
	026A RESEARCH SATELLITE	SATELLITE	915	Sn		DEC	
		PHYSI CS	62000				
				SO		26 OCT 69	
1963 02	0 27B		615	Sn	29 JUN		
1963 02	0 27 C		616	SD		10 JUL 63	
	028A		618	SD		₹	
1963 02	0288		619	Sn		13 JUL 63	
1963 02	7.28C		620	SO		16 JUL 63	
1963 02	029A		621	S D			
1963 02	0298		623	SO		รุ	
	0300		624	Sn	18 JUL		
1963 03	318		625	Sn		J.	

INTER-			DECAYED OBJECTS				
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DEST GNATION		NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1963 LAUNCHES	ES (CONT.)						
			626	S O	31 400	11 AUG 63	
			627	SO		YOU	
1963 033A	C05M0S 19		632	USSR	6 AUG	MAR	
1963 034A			633	USSR	9 AUG		
			070	S S	24 AUG	SEP	
			637	s o		NOK YA	
			638	: s	90¥ 63	CO ADM /	
			639	sn			
			049	Sn		SEP	
1963 036A			641	sn	6 SEP	13 SEP 63	
			863	\$n			
			***	SO:	6 SEP	_	
				? i		SE L	
			\$55	s e		10-11 SEP 63	
1963 037A			900) <u>(</u>			
1963 038H			7259	s s			
	ERS 12		675	s n			
696	COSMOS 20		673	USSR		_	
			676	ussa		007	
1963 041A			229	so		OCT	
1963 0418			678	s :		28-29 DCT 63	
			67.0	s :	25 OCT	00.1	
			0 4	S 0			
			1 00 00 00 00 00 00 00 00 00 00 00 00 00	S 2		2 :	
-			691	ה מ ב	מא מכן		
	POLYOT 1		1 8 9 1 8 9	SSS		16 OCT 82	
			684	SSO	N ON .		
			685	USSR	NON I		
			989	USSR	AON T	DEC	
1963 0448	COSMOS 21		587	USSR	11 NOV		
			80 Q	USSR		NOV	
196	22 504502		0 4 0 0	USSR			
	EXPLORER 18		F 00 00	28 S	10 NOV	3 DEC 63	
1963 047N			*009	S		בר בי היה	
963			6158	s S		2	
			695	SO	_	DE C	
			2930	Sn		Š	
693			4586	SO			
1963 0495			6182	SO	5 DEC	AUG	
	•		6283	SO	5 DEC		
1963 C304	COSMUS 23		707	USSR			
			708	USSR	13 DEC.		
			709	USSR	13 DEC	3 JAN 64	
			710	asso.	13 DEC	Z	
	AC SOMEON		711	SO :	18 DEC	20 DEC 63	
			21,	asso	19 DEC	28 DEC 63	

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			CATALOG		70000	VEC 48	NOTES
DESI GNATION		NAME	+UMBER	SUURCE	L POWCH		
1963 LAUNCHE	LAUNCHES (CONT.)						
			213	USSR	19 DEC	247	
1905 0520	EXDI OBED 10		714	Sn		HAY	
1963 0530			723	ns		12 NOV 82	
			725	ns		U (
			717	ns		5 001	
			736	ns		> :	
			718	S O	21 DEC	4 C NU C	
1963 0558			51.	ŝ			
1964 LAUNCHES	S.						
	0700		740	SO	25 JAN		
##00 #06T			749	Sn	25 JAN	FEB	
	SATURN 5		744	ns		APR	
			14428	USSR			
			16545	USSR		FEB	
			16546	ussa		FE8	;
	RANGER 6		747	ns		FEB	*
			752	Sn '	15 FEB	*	
1964 008B			755	Sn		ב ב ב	
1964 009A			754	S		¥ (
1964 0098			756	Sn			
	COSMOS 25		757	USSR	27 FEB		
			758	X550		M A A	
			20,7	USSR			
			259	SO	28 FEB		
1064 0118			760	ns		AUG	
			761	SO	28 FEB	SEP	
			2663	NS		W Y	
			764	Sn		TAR	
			765	NS		×	
	COSMOS 26		766	USSR		S S	
			767	USSR		MAY.	
1964 013C			768	USSR	X 4 5 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6	24-25 MAD 64	
			100	250			
	COSMOS 27		770	7550 1550		HAR	
			77:	1850		N A	
			52.2	8557		3-4 APR	
			22:	<u> </u>		> 0 2	
	ARIEL Z		778	S			
				SO	27 MAR		
7610 8061	CMCV		776	USSR		3 APR 64	
	7 0007		111	SSS		2 APR 64	
9010 900			778	USSR	2 APR	5 APR 64	
	RC SOMEON		977	USSR	A APR		
			780	USSR	A APR		
			781	USSR	A APR		
	GENINI 1		782	Sn	8 APR	12 APR 64	

DECAYED OBJECTS

			DECAYED OBJECTS				
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1964 LAUNC	LAUNCHES (CONT.)						
1964 0194			783	USSR	12 APR30	APR-1 MAY 64	
496	POLYOT 2		784	USSR		z 5	
			786	Sn		APR.	
1964 0208			787	S n		APR	
			788	s :	-	4	
			789	S 0	23 APK	25 APR 64	
1964 UZUE	00.00000		201	ss n		MAY	
			792	USSR		MAY	
			MOL	USSR		27	
			794	USSR		APR	
1964 021E			795	USSR		404	
1964 022A			796	Sn	-	¥	
	COSMOS 30		797	assn:			
			798	USSR	b 0	Z >	
			799	S 0 :	A	10 TAN 22	
	SATURN 6		000	n u		֓֞֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	
			75175	ה ע ב		2	
1964 0206				S		NO.	
1964 0214	TOSMOS 31) FI	ຊຸທຸກ	_	_	
1964 0288	•		408	USSR	NOC 9	-	
	COSMOS 32		807	USSR		Ž	
			808	USSR	10 JUN	3	
1964 029C			810	USSR		2	
			811	Sn.		-	
			820	Sn:	-	9 :	
1964 032A			\$ T 0	so:		10 700 01	
	,		821	S 0 0		3 =	
	COSMOS 33		010	2000	NOT EC	\$ =	
			- 10 q	45.00 T	NOT EX		
1964 0330			0 0			3	
	AF SOMEON		000	asso	_	¥	
			1 PC 80	USSR	1 JUL	15 JUL 64	
			824	SO	2 JUL	7 AUG 69	
			825	O.S	6 JUL	ا ا	
			826	SO	6 JUL	Z	
			827	SO	-	뒺	
			828	SO	•	VQ0	
	ELEKTRON	*	830	USSR		2	
			832	USSR	•	¥Q	
1964 038E			5892	USSR	•	FE8	
496			5893	USSR	10 JUL	> NO	
1964 039A	COSMOS 35		833	USSR	_	\$	
1964 0398			934	USSR	•	V	
1964 039C			835	USSR	-		
1964 0390			୦ ମ ଟ	ASSU ::	100	3 -	
1964 040C	ERS 13		838	SO:	7 2	1 JUL 90	ď
1964 041A	RANGER 7		842	s S	•	-	;

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INTER- NATIONAL DESIGNATION 1964 LAUNCH	_		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
DESIGNA 1964 LA							
1964 LA	TION	NAME	NUMBER OF THE PERSON	SOLIDOR	I Almora	* # U U U	
							20.00
	LAUNCHES (CONT.)						
1964 04	042A C0SM0S 36		440	assn	HW. OF	28 FFB AR	
	0428		940	USSR	30 JUL	N ON	
			846	Sn	5 AUG31	AUG-1 SEP	
	4A COSMOS 37		646	USSR		23	
	9		646	USSR	14 AUG	SEP	
4040 400 E	# n + c		020	SO	14 AUG	AUG	
	50.0		00 J	s c		MAR	
	6A COSMOS 38		20 d	50		90	
	COSMOS		7 40	8880 8880	10 AUG	\$ NOA 94	
1964 046C	COSMOS		- ଜନ୍ମ	: es		2	
	Q9		856	USSR		FEB	
	6 E		657	USSR	18 AUG	SEP	
	δF		859	USSR		SEP	
	0466		860	USSR		SEP	
	8 *		861	Sn			
	4 0		863	USSR		15 SEP 64	
	90.0		865	USSR	22 AUG	28 SEP 64	
			868	USSR			
	USUA COSMOS 42		400	USSR	_		
B060 4961			866	USSR			
1964 050	or costos to		708	USSR	22 AUG	DE DE	
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1964 070AX		0001 4EO-	888D		> > O	
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1964 0708B		1037	USSR		NOV	
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1964 070BE		1040	USSR		> 0 2	
1964 070BF		1001	USSR	28 OCT	>	
1964 0708G		1042	USSR		> 0 2	
1964 070BH		1043	USSR		^	
		1044	USSR		> 0 2	
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		1046	USSA		-	
1964 0708M		1047	USSR		> 2	
1964 070BN		1048	NSS4		> 2	
1964 070BP		1040	USSR		> 0 2	
1964 07089		1050	USSR		ò	
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INTER	NATIONAL DESIGNATION	1955 LAUNCHES	1905 001A			1965 3010					1965 005A		1965 0068		S.	1965 007A		1965 0098		1965 011A	1400 0118	1965 0110	193	965		1965 0120	965			0	1965 0123	965 0	C		1965 0129		1965 0125	965	965			1965 0128		1965 012AA	965		1965 012AD

		DECAYED OBJECTS				
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DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1965 LAUNCHES (CONT.)						
0		1127	48 SU	22 FFB	28 FFB 65	
965 0		1128	USSR		S MAR	
965		1129	USSR		MAR	
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965		1136	X 65 57	22 FFB	17 MAR 63	
965 01		1137	USSR USSR		MAR	
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965		1139	USSR		MAR	
968		1140	USSR		MAR	
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965		1151	USSR		MAR	
		1152	USSR			
965 0128		1153	USSR	22 FEB	MAR	
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965 01		- C - C - C - C - C - C - C - C - C - C	200 E	22 758	13 MAK 65	
965		1150	8550			
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		1161	USSR	22 FEB		
965		1162	USSR		MAR	
965		1163	USSR		Z Y	
1965 01260		1104	USSR Section 1		MAR	
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965 C		911	9551			
965		11.70	SSO			
965		1111	US SR			
5 01		1172	USSR	22 FEB	MAR	
S		1173	USSR		MAR	
5 012		1174	USSR	22 FEB		
5		1175	USSR	22 FEB	œ	
1965 012CG		1176	USSR	22 FEB		

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	1	DECAY			5 MAR 65	MAR	MAR	MAR	¥ :	1 MAX 05	K 0	CO STAN	•	1 MAR 65			MAR	MAR	Z Y	CO XAM 12	K 4	MAR	MAR.	9 MAR	14 MAR 65	NAM A	SO MAN O	Z Y	WAR.	MAR	2 MAR	Z (S	M A M	•	MAR	œ	MAR	Y S	12 MAR 05	2 4	4	Z Y	MAR	MAR 6	3 MAR	MAR	MAR 6
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	9	SOURCE		USSR	USSR	USSR	USSR	USSR	USSR	asso.	2000	9881	SS ST	asso	USSR	USSK	USSR	USSR	asso	3880	3550 3551	es son	USSR	USSR	USSR	USSR	USSE USSE	as so	USSR	USSR	USSR	USSR.	RSSO	1550	8880	USSR	USSR	USSR	USSR	ASSO.	2000	8550	USSR	asso	USSR	USSR	USSR	USSR
DECAYED OBJECTS	CATALOS	NUMBER		1177	1178	1179	1180	1181	1182	1163	\$ 0 T	1165	2011	11.00	1189	1190	1194	1195	1196	1197	8611	1200	1201	1202	1203	1204	1205	0021	1210	1211	1212	1213	1214	1215	1217	1218	1219	1220	1221	1222	1553	1236	1226	1227	1229	1230	1231	1232
		NAME																																														
- CAMPA	NATI ONAL	DESIGNATION	1965 LAUNCHES (CONT.)	1965 012CH	965			1965 012CM				-	1965 UIZCS								.	1965 01200					1965 01207	1965 01204						1965 01205				1965 0120X				1905 CIZEB	1965 UISEC					965

		DECAYED GBJECTS			
INTER- National Designation	NAME	CATALDG NUMBER	SOURCE	LAUNCH	0
1965 LAUNCHES	S (CONT.)				
1965 012EK		1233	USSR		20 M
965		1234	USSR		20 E
1965 012EM		1235	USSR	23 FEB	2 2
0 40		1237	2550 2550		70
		1238	USSR		17 H
		1239	USSR		8 P
		1240	ASSU.		* :
		1241	8880 8881	23 FEB	
1965 012EV		1243	ASSU ASSU		1 2 2 2
		1254	USSR		12 #
		1255	USSR		20 H
		1256	USSA		21 E
		1257	USSR	23 FEB	21.
1965 012FA		1961	3550 3550		
965		1262	USSR		15 1
		1263	USSR		21 H
965		1264	USSR		56
1965 012FF		1265	USSR	23 FEB	67
		1275	X 25.20		21.2
965		1276	USSR		202
		1277	USSR		20 E
965		1278	USSR	23 FEB	22 .
1965 CIZFM		1280	x6.00	23 FEB	1 42
965		1281	USSR		01
		1282	USSR		21 #
		1283	USSR		23
		1284	USSB Control	23 FE8	0.0
1965 012F1		9621	x 6 5 5		
965		1297	USSR		22 #
965		1299	USSR		20 1
		1300	S S S S	23 FEB	2.5
1965 01257		# OF .	9550 11550		2 6
900		9001	SO		18
1965 0138		1193	SO	25 FEB	10-11
965	COSMOS 58	1001	USSR		25
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1965 015A	COSMOS 59	1191	USSR	7	0 5
		1207	SSS		10-11
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965		1303	s n		* ;
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INTER-	NATIONAL DESIGNATION	1965 LAU	1965 0170		1965 017F						A010 2001	10.00						1965 0206		1965 020K				1965 020P				1965 0204					1965 02040					1965 020AR					1965 020AR	

		DECAYED OBJECTS				
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DESTENATION	NAM	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1965 LAUNCHES (CONT.)						
1965 020AV		1410	05511	4	, and a	
		1436	: 88 SO	S MAD	20 144 65	
		1437	USSR	15 MAR	0	
		1438	USSR	15 MAR	NO.	
		1439	USSR		ZYS	
1965 0208A		1476	USSR		21 SEP 67	
		1891	NSSR :			
		7841	8850	15 MAR	ZY	
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		1636	2660	YVE CI	APR	
1965 020BM		1487	2550 8551		70 NOC 01	
1965 020BN		14.08	A2.23			
		1489	USSR			
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		1651	USSR		S. G.	
		1492	USSR		Ž	
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		1404	USSR		SEP	
		1496	USSR		SEP	
1905 UZUBA		1651	USSR			
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1965 UZUCN		1542	USSR			
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1965 02008		1555	USSR			
1965 320DC		1556	USSR	15 MAR	2 MAY 67	

			DECAYED OBJECTS				
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1965 LAUNCHES	S (CONT.)						
				85	15 MAR	12 FEB 67	
1965 02000				asso	15 MAR	Š	
-			1559	USSR	15 MAR	APR	
			1560	USSR			
			1561	asso		APR	
			1562	USSR	15 MAR	FEB	
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1965 020DL			1564	USSA			
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			1567	3880	A A I	7	
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1965 020ER			1601	2550		ZY	
			1633	USSR		31 JAN 81	
			1635	USSR			
			2203	USSR		APR	
			2204	USSR			
			2339	USSR		NO	
			2387	USSA		Ö	
			2637	USSR	15 MAR	FEB	
1965 020EP			3163	USSR		₹	
1965 020EQ			3707	USSR			
1965 020EX			3964	USSR	IS MAR	ָ מַלַ נ	
1965 020EZ			4016	8880		13 APK 61	
			5733	X550			
			5813	2550	SAM CL	V V V V V V V V V V	
			2000	1550			
1965 UZUFE			525	SD		DEC	
			1268	. v.		5 OCT 65	
			12.89	SO	18 MAR	SEP	
			1290	SD	18 MAR		
			1376	SO		N Y Y	
			1463	SO	18 MAR	MAY	
	VOSKHOD 2		1274	USSR		MAR.	
			1285	USSR		MAR	
1965 022C			1286	USSR			
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1965 LAUNCHE	LAUNCHES (CONT.)						
1965 061A	COSMOS 77		1469	USSR	3 AUG	11 AUG 65	
965 0			1470	USSR	3 AUG	AUG	
1965 062A			1471	Sn		AUG	
965			1472	SD		_	
			1474	s :	3 AUG	V C	
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1965 065N			3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	\$ ₹	13 AUG	28 AON 21	
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965	COSMOS 78		5051	SSO		AUG	
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	COSMOS 91		1603	USSR	23 SEP	2	
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1965 0750			1600	2558 2558	23 SEP	20 SEP 63	
			6091	SO		oc i	
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		DECAYED OBJECTS				
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DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1965 LAUNCHES (CONT.)						
1965 082CR		1754	SO	15 0CT	4 AUG 68	
		1755	Sn		APR	
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9 6		1824	, s			
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965 0		1827	SO		DEC	
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965		1831	SO	15 OCT	NO	
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965		1853	SD		NO.	
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		0000	s s	15 OCT	JAN 67	
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965		1879	SO		MAR	
		1880	Sn	15 OCT	11 SEP 66	
965		1682	SO			
965		1885	Sn		NYS	
965		1886	S .		MAR	
965 0		1887	S	15 OCT	MAY	
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1965 082FF 1065 082FG		1,000	SD S	15 OCT	28 MAR 67	
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		DECAYED OBJECTS				
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NATIONAL DESIGNATION	NAME	CATALOG	SOURCE	LAUNCH	DECAY	NOTES
1965 LAUNCHES (CONT.)						
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1965 082HW		1990	S 2	15 001	O JAN 69	
1905 USZAN		1001	5 5		2	
		2001	n so	15 OCT		
		9991	SO		APR	
		2041	SO	15 OCT	16 MAR 73	
		2042	Sn		AON	
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1965 082JF		2045	Sn		00	
965		2046	SO		è.	
965		2047	Sn :))	
965		2048	so:	15 001		
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965		2081	s o		>ON	
965		2082	SO			
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965		2102	s T		Y DE	
965		2103	s :		> (
965		2158	s :		001	
965		2333	s :		SEP	
965		2340	SO:		3 5	
965		2384	s :	120 61	23 25 73	
1965 082KH		240	s o	100 61	-	
9 6		2573) N		MAR	
900		2574	S		DEC	
90		2786	SO			
965		2787	OS		SEP	
		2790	SO	15 OCT	AUG	
1965 082KT		2791	SO		APR	
1965 082KU		2792	SO		6	
ю		2794	SD			
965		2795	Sn	15 OCT	SEP	
965		2887	SO			
965		2898	s :		5	
965		2899	SO:		MAY	
965		2929	s c	15 001	25 APR 79	
596		2991	^ <u>v</u>			
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1965	082LL		3050) y	15 OCT	3	
1965	082LM		3064	SD		25 DEC 79	
1965	082LP		3149	SD.		DEC	
1965	0.821.0		3325	SO.		ď	
1965	082LR		3331	Sn		SEC.	
1965	082LT		3356	SO		MAR	
1965	082LV		3358	SO			
1965	082LX		3360	SO		2	
1965	082LZ		3362	ns		DEC	
1965	082MA		3363	SO	15 OCT		
1965	082MB		3364	٥S		> 0	
1965	082MC		3365	NS		MAR	
1965	082MD		3366	Sn		13 APR 81	
1965	082ME		3367	SO	_	ZYS	
1965	082MF		3368	SD		MAR	
1965	0.82MH		3370	SO	15 OCT	MAR	
1965	082MJ		3371	O.S			
1965	082MK		3372	Sn		NOV	
1965	082MM		3374	Sn		APR	
1965	082MN		3376	\$O	15 OCT		
1965	082MP		3377	ns		00	
1965	082MQ		3378	s n			
1965	082MR		3379	SO	15 OCT	Ę	
1965	082MU		3362	so		SEP	
1965	082MW		3384	SO		Ž	
1965	082MX		3385	Sn			
1965	OBSNA		3400	SO		MAR	
1965	0.82NB		3401	SO	15 OCT	MAM	
1965	0.82NC		3402	SO		3	
1965	0.82ND		8048	Sn		09 AON 9	
1965	0.82NE		404B	Sn			
1965	082NF		3405	SD	-		
1965	082NG		3406	Sn		8 MAY 69	
1965	082NH		3407	SD	15 OCT	APR	
1965	082NJ		3410	ns		OCT	
1965	082NK		3411	Sn		00.1	
1 965	OBSNL		3412	รก		MAY	
1965	OBZNM		8 T 4 E	Sn		X X X	
1 965	OBZW		34.20	SO		APR	
1965	082NP		3421	\$n		Z	
1965	0.82NQ		3422	SO		SEP	
1965	0.82NR		3423	S n		₹	
1965	0.62NS		34.24	Sn	_	APR	
1965	0.82NT		34.25	SO		Š	
1965	082NU		3426	SO		FEB 8	
1965	082NV		3427	Sn	15 OCT	MAY 8	
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### MAMER SOURCE LANGER DATE 18.35 19.55 10	NATIONAL DESIGNATION		TALOG	SOURCE	LAUNCH	
#\$\$ (CONT.) 13.35			UMBER			DECAY
19.35 19.36 19.37 19.39 19.30	LAUNCHES (CONT.	•				
3,436 US 15 OCT 12 28 3,440 US 15 OCT 12 28 3,440 US 15 OCT 12 13	082NY		3435	Sn		
14.39 14.40 14	32NZ		34,36	S		-
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3440 US 115 OCT 115 3444 US 115 OCT 115 3445 US 115 OCT 115 3446 US 115 OCT 115 3447 US 115 OCT 115 3447 US 115 OCT 115 3448 U	082PC		96.48	Sn Sn		
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344.3 US 15 007 15 344.5 US 15 007 15 344.6 US 15 007 15 344.6 US 15 007 17 344.6 US 15 007 18 345.6 US 15 007 21 346.6 US 15 007 21 346.6 US 15 007 21 346.7 US 15 007 21 346.8 US 15 007 21 347.8 US 15 007 21 347.8 US 15 007 21 347.9 US 15 007 21 348.9 US 15 007	82PF		3442	SO		
3444 1	32PG		n d d n	Sn		
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3447 947 0.5 15 007 24 3446 0.5 15 007 24 3466 0.5 15 007 24 3466 0.5 15 007 21 3468 0.5 15 007 21 3468 0.5 15 007 21 3470 0.5 15 007 21 3477 0.5 15 007 21 3478 0.5 15 007 21 3479 0.5 15 007 21 3470 0.5 15 007 21 3470 0.5 15 007 21 3470 0.5 15 007 21 3480 0.5 15 007 21 3480 0.5 15 007 21 3480 0.5 15 007 21 3480 0.5 15 007 21 3480 0.5 15 007 21 3480 0.5 15 007 21 3480 0.5 15 007 21 3480 0.5 <	Z D X		n de	s o		
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3478 US 15 0CT 14 480 3481 US 15 0CT 14 50CT 10 50CT 11 50CT 10 50CT	320C		3477	NS		
3481 US 15 0CT 14 15 0CT 14 15 0CT 14 15 0CT 15 0CT <td>1200</td> <td></td> <td>3478</td> <td>Sn :</td> <td></td> <td></td>	1200		3478	Sn :		
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1965	LAUNCHES (CONT.)						
1965	082RM		3730	Sn			
	082RN		3731	SO		AUG	
	0.82RP		3732	SO	15 OCT	200	
1965	082RQ		3733	SO			
ß	0.82RR		3734	SD		9	
	082RS		3735	Sn :			
	082RI		3736	S :		A C	
	082RU		3740	\$ (00 400 62	
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	046BC		2285	SO.	NOC I		
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1966 056AC		9463	s i	24 JUN		
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1966 056BT		9771	SO	-	Z Y	
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1966 0568V		9773	SD	-	Z :	
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		9775	SO.		Z	
1966 056BY		9776	so		Z	
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1966	1650			2312	ns O	S JUL	15 JUL 66	
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1966	059X			2316	SO	5 JUL	ž	
	059Y			2317	Sn	5 JUL		
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	059AA			2319	Sn	5 JUL	¥	
	059AB			2320	Sn	5 JUL	ヹ	
	059AC			2321	SO	5 JUL	¥	
	059AD			2341	SO	5 JUL	₹	
	059AE			2342	N.S	5 JUL	亨	
	059AF			2343	so	5 JUL	₹	
	059AG			2344	sn	5 JUL	₹	
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DECAYED OBJECTS

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DESIGNATION		NAME	NUMBER	SOURCE	LAUNCH
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967 1			3075	USSR	
967 1			3076	USSR	
296			30.77	USSR	
967 1		;	3078	USSR	
196	COSMOS 197	26	3079	ASSU.	
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	NAME	(S (CONT.)											COSMOS 311		COSMOS 212		COSMOS 213		ċ	COSMOS ZI4	COSMOS 215		COSMOS 216		MULNIYA 1-8			COSMOS 217	COSMOS 218			COSMOS CIA					IRIS			COSMOS 221		CUSHUS 222	FCC SOMSON	į	COSMOS 224	1
INTER- NATIONAL	DESIGNATION	1968 LAUNCHES			1968 025K			1968 025P					1968 024C			1968 0298				1968 032A					1968 035A		a 0	1968 036A			1968 0370	1968 0388									1909 0438					

INTER-					
NATIONAL NAME	CATALOG	SOURCE	LAUNCH	DECAY	NOTES
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051A COSMOS 227	3294	USSR	NOS 81	Š	
6518	3295	USSR	-	Ž	
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0534 COSMOS 228	3298	USSR	21 JUN	3 JUL 68	
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057A MOLNIYA 1-9	3310	USSR	_	15 MAY 71	
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INTER- NATIONAL DESIGNATION	1968 LAUNCHES		1964 0728		1968 074A		1968 0758			896	1968 077A		996		968		1968 0808	0 4	968	968			968	1968 0838		968	968		968	1968 (185C					1908 0888									1968 091H	

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		3796	USSR	20 OCT		
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1968 091CE		6045	USSR	20 OCT	6 MAR 81	
1968 091CK		6764	USSR	20 OCT	27 OCT 79	
		14415	USSR		APR	
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		5288	USSR		Ş	
000		5305	USSR	22 JUL		
200	Ü	0004	SD.			
_	7	1004	1150	-	2	
090		2004	S)	26 JUL	₹	AL#
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696		- CO4	n 9	26 JUL	001	
696		A 4	s ::		O O	
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		9804	ń (c		SEP	
		6087	n v	26 JUL 27 11	1	
1969 064M		6004	S =	-	2 (
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1969 0640		1604	S =	•	֓֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	
		6604) S			
		4100	· 5	26 JUI		
		4101	\$ D		SEP	
696		4108	ns		247	
		4109	SO		SEP	
696		4110	Sn		OCT	
		5473	SO	26 JUL	ZYY	
		4024	SN	31 JUL	4 JAN 73	
	COSMOS 291	4058	USSR	6 AUG		
1969 0668	1000	4061	USSR	9 AUG	11 AUG 69	
		4062	USSR	7 AUG	A UG	
000		4003	US SR	7 AUG	AUG	
		+ P	0.55K	7 AUG	YOU	
	050 6	4	2000			
696		2004	r 2	5 O	7 MAK 61	
1969 071A	COSMUS 293	4072	8550		K 14	
696		4073	USSR		V V	
	COSMOS 294	40.74	USSA		A 115	
		4075	USSR	_	AUG	
696	COSMOS 295	4076	USSR		DEC	
090		4077	USSR		20	
696		4078	Sn	23 AUG	SEP	
000	COSMOS 296	4080	USSR	29 AUG		
696		4081	USSR		SEP	
696	COSMOS 297	4082	USSR	2 SEP	SEP	
0 0		4083	USSA		SEP	
1969 077A	COSMOS 298	4092	USSR		SEP	
		5604	ussa	15 SEP	16 SEP 69	

INTER- NATIONAL DESIGNAT	INTER- National Designation	z	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1969	LAUNCHES (CONT	7.						
,	, company			4004	USSR	15 SEP	16 SEP 69	
200	77.0			. OO 4	USSR		SEP	
5000	0//0			\$004 \$004	USSR	15 SEP	SEP	
000	077E COSMOS	200		2604	USSR			
				8004	USSR		SEP	
1000	0794			4102	sn		001	
1000	079B			4103	Sn			
1000	OROA COSMOS	300		4104	USSR		SEP	
0000				4105	USSR		SEP	
2000	COSMOS	102 301		4106	USSR		2	
000				4107	USSR			
000	4080			4111	SO		0	
1000	0.821			4142	Sn		Ş	
000	0.820			4147	ns		6 OCT	
4040	0,820			4148	SO		ZYT	
1040	0.824			4153	ns		APR	
0 40	08245			4162	ns		APR	
0401	OBEAL OBSAF			4163	SD		ZYS	
400	00241			4176	ns	30 SEP	MAY	
200	X 4 C 8 C			4179	SO		OCT	
200	0.00 C			9817	SO		000	
				4189	US	30 SEP		
1 9 6 6				4192	SO		<u>0</u>	
000	0.828H			4194	SO		001	
0 90	0.828K			4196	SO		MAY	
090	0.8291			4197	SO		APR	
1040				4198	ns Sn		APR	
1000				4199	SO		V O	
1 060	08288			4202	S O		Ž	
1 060	08285			4203	Sn		Z	
000	08281			4204	Sn		SEP	
1 060				4213	SO		APR	
1 060				4228	SO		X X	
1969				4229	NS			
1969				4230	ns		00	
1 969				4238	ns		0	
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1969	082CT			4241	SO		֝֞֞֞֝֞֝֞֝֞֝֟֝֓֞֝֞֝֓֓֓֞֟֝֓֓֓֓֞֟	
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1969				4248	s :			
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1969				4115	SO		5	
1969				4269	Sn		MAK	
1969				4270	Sn		ב ב ב	
1969	0.82DH			4271	s o		מינים	
1969	08203			4272	SO:			
1969				4288	SO:	0 0		
1 969	08200			4310	80		Y L	

		DECAYED UBJECTS				
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NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1969 LAUNCHES (CONT.)	2					
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		(***	ָר ת ב			
1000 0000) TO # 4	6 S	30 SEP	3 FEB 71	
090		4324	s o		MAY	
		: III :	s n		7 MAY	
696		4359	SD		100	
1969 082EE		5644	SO		19 APR 79	
		4644	NS US		ZY	
1969 082EJ		LE43	US		Z S	
1969 082EL		4439	Sn		9 MAY	
		m stst	ns		3	
		8444	Sn	30 SEP	16 SEP 80	
696		4450	SO		DEC	
696		4454	Sn		00	
696		4457	s ·			
696		4459	SO		FEB	
696		1944	\$:	30 SEP	X	
696		7944	Sn		MAR	
696		£999	Sn			
696		4044	Sn		A P	
696		0944	s :		2	
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		45.00	50		Ş	
696		0404	s S			
696		4541	SO		DEC	
1969 082GK		4542	SO		DE:C	
1969 082GM		4544	ns		支	
		4548	Sn			
696		4549	S	30 SEP	U :	
		4550	so:		Z (
696		1.22	S)	30 SEP		
		4876	s :		APR	
		4887	s o		3	
696		6884	s :			
		4891	SO:		2 4 5	
		5692	ທ ເ ວ :	30 SEP	24 AUG 72	
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INTER			DECAYED OBJECTS				
NATIONAL			CATALOG				
DESIGNATION	_	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1969 LAUNCHES	ES (CONT.)						
1969 C82HP			5195	Sn	30 SEP	15 JUN 81	
1969 082HQ			5270	Sn	30 SEP	NYS	
			5271	SN		APR	
			5339	SN		Ž	
			5362	Sn		SEP	
-			5429	S n	30 SEP		
			0:04:0 1:1	ສ (:		SEP	
			1766	S :		3	
1969 08236				м и Э :	30 SEP	6 DEC 71	
			5500	s (- I	
			5033	s ::		9	
1969 082 16			***************************************	^ u		10 APK 01	
			00000	n 9			
			00/0	ń (2	
1,040 0401			10/0	S 0	30 86	08 NAU 5.	
			20 LC	n (3 8	
			5676	s es		בן נו	
			5/50	۸ : د د	30 SEP		
			16/6	n (2 (
			5792	s :		APR	
AC280 6961			5676	۸ : د د	30 SEP		
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			0 0 0	٠ د د		֓֞֝֟֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֟֓֓֓֓֓֓֓֓֡֓֓֓֓֓֓֡֓֓֡֓֡֓֡֓֡֓֡֓֡֓֡֓֡֡֡֡֡֡	
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			4400	9 2			
			6178	SO	30 SEP	9	
			7285	\$0		3	
			8606	SD.		3	
1969 0B2KL			0866	Sn	30 SEP	APR	
1969 083A	ESR0-18		4114	ESRO	1 001	23 NOV 69	
1969 0838			4117	SO	1 OCT		
1969 083C			4116	Sn		004	
1969 0830			4118	Sn		00	
	SOYUZ 6		4122	USSR		16 OCT 69	
			4123	USSR		oct	
	SOYUZ 7		4124	USSR		Š	
			4125	USSR		4 OCT	
	80YUZ 8		4126	USSR		8 OCT	
			4127	USSR		2	
	INTERCOSMOS	S 1	4128	USSR		ZY	
			4129	USSR		DEC C	
	COSMOS 302		4130	USSR		OCT	
1969 0898			4131	USSR		OC1	
	COSMOS 303		4136	USSR	18 OCT	23 JAN 70	
			4137	USSR		OEC	
	COSMOS 305		4150	ussa	22 OCT	_	
1969 0928			4151	USSR	22 OCT	24 OCT 69	

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			DECAYED OBJECTS				
INTER- NATIONAL			CATALOG				
DESI GNATION	z	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1969 LAUNCHES	HES (CONT.)						
1969 093A	COSMOS 306		4182	USSR		>OM	
			4183	USSR		00.1	
	COSMOS 307		4184	USSR			
1969 094B			4185	USSR	24 OCT	20 JUL 70	
	COSMOS 308		0-	es en		2	
			4220	ussa		6 DEC 69	
1969 0970			4242	FRG		00	
			4243	FRG		AUG	
696			4261	FRG		₹	
			4265	280			
1969 0984	CUSMUS 309		4663	20.00	12 NOV 21	20 MUN 69	
			47.74	9550		2	
			4235	USSR	12 NOV		
1969 098E			4236	USSR	12 NOV	30 NON 69	
	APOLLO 12		4225	Sn		NO	\$7¥
	LUNAR MODULE	m,	4246	SD			AMA
	COSMOS 310		4232	USSR			
			4233	USSR	-	> O	
	C05M0S 311		\$ 252 1 0 0 0 1 0 0 0	USSR	24 NOV		
1969 1068	FIF SOMEON		4634	1880	* OF C	15 JAN 70	
	;		4263	USSR		2 E	
1969 105A			4564	ns	4 DEC	NYO	
	COSMOS 314		4266	USSR	11 DEC		
			4267	USSR		NY7	
	COSMOS 315		4273	USSA		NA N	
1969 1076			4 / 4	U55K	20 050	00 APR 79	
			0104	8550 0551			
			4287	USSR	20 DEC	2 5 7	
			4594	USSR		¥¥	
1969 108A	COSMOS 316		4282	USSR		AUG	
			4283	USSR		247	
			4284	USSR		Z Y	
	COSMOS 317		4280	USSE		ZY	
9601 6961			1924	2000	23 060	28 UEC 69	
			0627	2000			
1969 1040	SOMSOUGHTNI	٠,	4001	K 00 1	25 05.0	2 2	
			4286	USSR	25 DEC	MAR	
1970 LAUNCHES	ÆS						
	COSMOS 318		4292	85SD			
1970 0018			5 00 00 00 00 00 00 00 00 00 00 00 00 00	AS 0	7 4	15 JAN 70	
	OUE SUBSUS		4 000	65		2 =	
			4300	USSR	15 UAN	1 MAY 70	

10			DECAYED OBJECTS				
NATIONAL			CATAL DG				
DESIGNATION	-	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1970 LAUNCHE	LAUNCHES (CONT.)						
1970 005A	COSMOS 320		4301	USSR	16 JAN	10 FEB 70	
1970 0058			4302	USSR			
			4303	USSR	16 JAN		
1970 0050			4004	USSR	16 JAN		
1970 005E			4305	USSR		MAR	
			4306	USSR			
			4307	USSR			
	COSMOS 321		4 308	USSR		MAR	
			4309	USSR	SO JAN	K K	
			4313	บรรค		ZYS	
			4314	USSR			
_	COSMOS 322		4315	USSR			
			4316	USSR		ZY	
1970 010A	COSMOS 323		4328	USSR		FEB	
1970 0108			4329	USSA	10 FEB		
1970 013A	MOLNIYA 1-13	•	4336	USSR		SEP	
			4333	USSR		MAR	
1970 013C			すのの す	ussa		11 MAR 70	
1970 0130			4337	USSA		ZAZ	
	COSMOS 324		4338	USSR		HAY	
1970 0148			4 339	USSR	27 FEB	APR	
	C05M05 325		4340	USSR	4 MAR		
			4341	USSR		MAR	
			4342	Sn		MAR	
			Mana .	S T		> i	
	DIAL-WIKA		##M#	FRG		001	
			S P P P P P P P P P P P P P P P P P P P	FRANCE		SEP	
	COSMOS 326		4 346	USSR	13 MAR		
	1		N 460 4	USSR		M A	
	ME I FOR		ひゅうか	USSR) 2	
			0000	× :		> :	
			5573	US SR			
	COSMOS 327		1321	NSSD :		Z (
			4352	ASSO.			
	CUSMUS 328		0000	2000	C MAK	¥ (
			0000 1 m 1	2002	A MAR	¥ 6	
	COMMON SEN		- CO F +	2000		¥ (
			0000	2000	x 6	O/ X-X 6.	
4420 OF 6.	COSMOS SSO		0.004	2000		2 :	
			105	¥660			
1970 0251			7000	\$ E		14 OC 92	
			000	6 3	¥ 6	9 :	
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			87.04	SO :	W Y D	_	
			4701	SO		₹	
			4702	SN	8 APR	3	
			4703	Sn		DEC	
			4732	Sn	8 APR	FEB 7	
1970 025CP			4740	Sn	8 APR	10 AUG 72	
1970 025DG			4758	Sn	8 APR	18 MAR 82	

!			DECAYED OBJECTS				
INTER-							
DESIGNATION		NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1970 LAUNCHES	ES (CONT.)						
1970 025DV			4775	9 1	004	1	
			900	Sh		\ \ \ \ \ \	
1970 025EV			4865	n	8 APR		
			4870	ns	8 APR	NO NO	
			4898	ns	8 APR		
			4915	ns	8 APR	AUG	
			4931	ns		4 AUG 78	
			PRO+	N	8 APR	Ž	
			4936	Sn :	8 APR		
H9020 0761			7 40 4	sn:		₹ ;	
1970 UZ3GK			DA CO 4	SO			
			V 64	\$ P	10 a		
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			4078	Si			
			3803) N	8 A B	¥ 00 ¥	
970			6664	s o	8 APR		
1970 025HX			5023	s n	8 APR	SEP	
1970 025JC			5037	us	8 APR	3	
			5038	Sn	8 APR	3	
			5190	ns	8 APR	NO.	
			5346	Sn	8 APR	2	
			5391	ns	8 APR	FEB	
970			5421	ns	8 APR		
			5423	Sn:	8 APR	DEC	
2 6			46.24	Sn :	S APR		
1970 025LF			1066	SO:	8 APR	DEC	
1970 025LN			X 0 0 0 0	S 5	E C	A 2	
070			9999	\$ 5	2 C	24 MAK 72	
			5700	S =	2 Q X	1	
			5825	S	8 90		
1970 025MS			6015	ns	8 APR		
			6051	SO	8 APR	MAR	
970			6084	us	8 APR	¥	
			0+140	NS	8 APR	MAR	
			6185	SO:	8 APR	2	
4NC20 0201			7000	S :	8 APR	87 NAL 48	
	IEE SUMSUL		12//1	50 50	X 6	9 6	
070			1 K	X550	K 0	K 0	
	APOLLO 13		4371	SO	1 400	Z Q V	44
_			4372	900		Y DO	4
1970 030A	COSM05 333		4373	USSR	15 APR		
			4214	USSR	15 APR	APR	
			4395	USSR		MAY	
			4306	USSR		MAY	
0/6			4375	SO.	· 0	MAY	
1970 033A	COSMUS 334		4378	USSR	23 APR	9 AUG 70	
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DESIGNATION 1970 LAUNCHES (CONT 1970 033C 1970 033E 1970 033E		CATALOG				
	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
	1.)					
		4397	USSR			
		4.398	USSR	23 APR	HAY	
		4399	USSR		MAY	
		0044	PRC		MAR	
1970 035A COSMOS	s 335	4380	USSR		200	
		4381	USSR	24 APR	17 MAY 70	
037C		5055	US SR		בי ב	
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1970 0428	7.74	0 - 4	35.50			
4540	,	7 7 4 4	8550		FEB	
	44F 2	1 m				
8440)	3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2550		3	
		4415	USSR	13 JUN	17 JUN 70	
	S 349	4416	USSR		Z S	
1970 0458		4417	USSR	-	N S	
1970 048A		4422	SD		ゴ	
1970 049A MOLNIYA	YA 1-14	4430	USSR	-	_	
1970 0498		4424	USSR		3	
		4423	USSR			
0650		4431	asso	26 JUN	MAR.	
	IS 350	4425	USSR		₹ 1	
0508		4426	USSR	NOT 92	07 NUC 62	
	IS 351	4427	USSR	-	3	
0518		874	¥ 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	-	2	
	15 352	014	¥85:	, k	0/ 100 CT	
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1970 055A CUSAUS	233	7 (C)	4551		1	
		4477	Sh		V O	
	15 354	4 40	USSR		₹	
0.568		4480	USSR		₹	
1970 056C		4479	USSR	28 JUL	3	
	INTERCOSMOS 3	4482	USSR		6 DEC	
1970 0578		4483	USSR		>0N -	
_	15 355	•	USSR	7 AUG	5 AUG	
0588		2044	85SD		7	
	15 356	4487	AS SU		ב ס	
0598		8844	USSR	_		4
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INTER- NATIONAL			DECAYED OBJECTS CATALOG				
DESI GNATION	N.C	NAME	NUMBER	SOURCE	LAUNCH	DECAV	NOTES
1970 LAUNC	LAUNCHES (CONT.)						
			4492	ns	18 AUG	3 SEP 70	
	COSMOS 357		4495	USSR	19 AUG	>	
			9644	USSR	-	001	
	COSMOS 358		4497	USSR		N S	
			8044	USSR	-	3	
1970 0640	•		4514	USSR	20 AUG		
	ACC COMEDO		100	2000			
			V 400	2000	32 416	0/ 000 11	
			* OF 4	2000		1	
			\$200 \$200 \$200	255D		SFD	
	NNSS 30190		450 G	Sn.		AAR	
1970 067E			6372	ns	7	APR	
1970 068A	COSMUS 360		4508	USSR		SEP	
			4509	USSR		SEP	
1970 068C			4516	USSR	29 AUG		
			4517	USSR	29 AUG	11 SEP 70	
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	COSMOS 361		4524	USSR		SEP	
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1970 LAL	LAUNCHES (CONT.)						
1970 080E	JE.		4585	USSR	8 OCT	Š	
	1A C05M0S 369		4573	USSR			
			4574	USSR	8 OCT	> ·	
	2A COSMOS 370		4576	USSR		00	
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1970 0899	46		4671	USSR		Z	
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1970 089Y	٨6		5022	USSR		2 2 3	
	089AA		5029	USSR		Ş	
	089AF		5068	USSR		DEC	
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	08943		5071	USSR	23 OCT	901	
	089AK		5072	USSR		APR	
	089AL		5073	USSR		3	
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1970 080	0894K		5078	USSR	23 OCT	22 APR 72	
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	WA980		5132	USSR		>QN	
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-	089BC		5199	USSR		DEC	
	08980		5202	USSR			
	0.89BE		5224	USSR :	•	S S	
	ОВОВН		5276	USSR		2	
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1971 LAUNCHES	LAUNCHES (CONT.)					
1971 0178		5004	USSR		MAR	
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1971 017E		5049	USSR	3 MAR	M M	
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		5119	essn		APR	
		5120	SSSO		APR	
		5121	USSR			
		5107	USSR	-	MAY	
		5109	USSR	1 APR	APR	
		5110	USSR	1 APR	APR	
	COSMOS 403	5108	USSR	2 APR		
		5111	USSR	2 APR		
	COSMOS 404	5113	USSR	4 APR	APR	
		5114	8880	4 APR		
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NAME	LAUNCHES (CONT.) 334B 336A 337A 037B 039C 040B 040B 040C 040B 040C 040B 042A 058MOS 419 043B 043C 043B 044A 063E	CAPSULE COSMOS 423 COSMOS 424	CAPSULE COSMOS 425	SOVUZ 11 COSMOS 427
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	057C		5307		USSR	N O	Z S	
	0570		5308		USSR	NOS	200	
	057E		5313		USSR		텇	
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		COSMOS 429	5331		USSR	JUL	2 AUG 71	
	0190		5332		USSR	JUL	Ŋ	
	0610		5370		USSR	-	3 AUG 71	
	0610		5371		USSR		AUG	
			5373		USSR		4 AUG 71	
		COSMOS 430	5340		USSR	J Y	AUG	
	0628		5341		USSR	JU.	29 JUL 71	
	0 62 C		534.2		USSR	JE.	7	
	0620		5.34.3		USSR	JUL		
	062E		5374		USSR	-	AUG	
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		APOLLO 15	5351		ns	کار	₽ O₹	٩٦¢
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		LUNAR MODULE	5366		Sn.	•	3 AUG 71	AMA AMA
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	9000		5380		USSR	-	¥0e	
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	0990		5436		ussa	AUG	P OV	
			5437		USSR	5 AUG	18 AUG 71	
		0V1-20	9626		ns	AUG	AUG	
		0AR-901	5382		Sn	AUG	31 JAN 72	
		0AR-907	5383		NS	7 AUG	19 SEP 71	
	0 67 F		5396		NS		11 JUN 72	
	9290		1045		ns	2 AUG	APR	
	0 67 H		9049		us	7 AUG	2 NOV 2	
0 179	0 67P		5410		NS	7 AUG		

			DECAYED OBJECTS				
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LES L	Z	H K K K	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1971	LAUNCH	LAUNCHES (CONT.)					
1 67 1	068A	COSMOS 433	5402	USSR	8 AUG	9 AUG 71	
1971	0688		5403	USSR		YOU S	
1971	0680		5404	USSR		AUG	
1971	¥690	COSMOS 434	5407	USSR		AUG	
7.61	8690		8040	USSR		AUG	
1001	0000		7245	asso.	-	SEP	
1071	0704		20 C 4 M	3550		ב סכו	
1971	0708		on w	5 u	12 AUG	, C	
1971	072A	COSMOS 435	20 to	80		2 SEP 71	
1971	0728		2446	8550			
1971	073A	LUNA 18	5448	USSR		SEP	*
1971	073C		5450	USSR		SEP	
1971	0730		5451	USSR	2 SEP		
1971	073E		5453	USSR		8 SEP 71	
1971	074A	COSMOS 436	5461	USSA	7 SEP	A JAN BO	
1071	0748		5462	USSR	7 SEP	MAR	AS¢
1761	0740		5463	USSR	7 SEP	MAY	
7.61	0.40		4946 1	USSR	7 SEP	ZYS	
17.7	0.46		5465	USSA	7 SEP	MAY	
1971	246		0 / 4 / 0	USSR	7 SEP	MAY	
1071	1 4 6		0000	200	7 SEP	3 !	
1971	0747		400C	25.50	7 SED	19 APR 72	
1971	074K		5776	assi	7 7 7	5 3	
1971	074L		5775	955	70.0		
1971	074M		5779	USSR	7 SEP	40.0	
1971	0.74N		5780	USSR	7 SEP	3	
1971	074P		5781	USSR	7 SEP	MAY	
1971	0740		5783	USSR	7 SEP	ع ا	
1971	075A	COSMOS 437	5466	USSR		MAR	
1971	0758		5467	USSR	10 SEP		
1971	0750		8779	USSR		FEB	
	40 V C		8040	SO.		001	
	90/0		0040	SD.		FEB	
1971	7070		6181	SO.	_	Z X	
107	8770	000	0740	CSSK			
1971	0770		5470	2000	14 SEP		
1971	0770		- C C C C C C C C C C C C C C C C C C C	8550		1/ JUN 01	
1071	077F		3 4 4	K000		ט ט ט ט	
1071	0776		7 d	2000	4 CH C	27 SEP 71	
1971	0.78A	COSMOS 439	\$ 5 4 5 B	2000	14 SCF	֓֞֝֞֜֜֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֓֓֡֓֓֓֓֓֡֓֓֡֓֡֓֡֓֡	
1971	0788		5470	200			
1971	079A	COSMOS 440	C 45	0331	24 55.7	א ל א	
1971	079B			9351		3	
1971	081A	COSMOS 441	10 AC	SSO			
1971	6189		5487	USSR		200	
1971	081C		5495	USSR		200	
1971	0180		5496	USSR	60	28 SEP 71	

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	DECAY		10 050	6 DEC	5 DEC	6 DEC	10 MAY	19 DEC	30 DEC	ADN 62	20 APR	14 FEB	27 DEC	11 DEC	4 DEC	5 MAR	4 MAY	21 NOV	7 APR	13 DEC	21 FFB	29 APR	3 APR	3 APR	4 APR	2 FEB	S CAN	9 FEB	24 DEC	31 MAR	24 DEC	19 DEC	18 FEB	7 P	11 DEC	9 MAR	26 JAN	13 DEC	18 MAR	2 MAR	18 MAR	8 MAR	6 FEB	29 OCT	26 FEB	16 MAR	15 MAR
	LAUNCH		0	-	0		*			70 AUV		-			29 NOV		NON OF		2 DEC			2 DEC				3 DEC			3 DEC			3 DEC	3 DEC						3 DEC		3 DEC			3 DEC		3 DEC	3 DEC
.á	SOURCE		assn	assn	USSR	USSR	US SR	485D	2000	3550 0351	255D	USSR	USSR	USSA	USSR	USSR	asso	SSSO.	2550	assn assn	asso	USSR	USSR	USSR	NSSN	85SD	asso	USSR	x850	USSR	USSR	488D	2880	455D	assn	USSR	USSR	USSR	USSA	USSR	USSR	USSR	NSS	USSR	assn:	asso.	USSR
DECAYED UBJECTS	NUMBER		5630	04-95	5653	5657	5620	5617	0100	> 100 0 4 4	5623	5624	5625	5626	5627	5628	5629	5630	000 m	1 in	5643	5644	5647	5648	5646	0.400	000	1000 1000 1000 1000	50 00 00 00 00 00 00 00 00 00 00 00 00 0	5655	5656	5658	> 0 0 0 4	9 40	5 () () () ()	5666	5668	5672	5673	5798	5799	5800	5801	5802	50 00 00 00 00 00 00 00 00 00 00 00 00 0	5831	5832
	NAME	S (CONT.)					MOLNIVA 2-1				COSMOS 458		COSMOS 459			COSMOS 460		# 00 N 00 C C C C C C C C C C C C C C C C	I WIENCOSED OF		COSMOS 461				COSMUS 462																						
INTER-	DESIGNATION	1971 LAUNCHES	1971 098E	1971 098F	_			1971 1008				1971 1018					1971 1038	1971 1030									1971 1060	1971 100D				1901 1701													1971 1067		1971 106AA

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1971	LAUNCHE	LAUNCHES (CONT.)						
1971	106AC			5834	USSR		MAR	
	106AD			5866	USSR	3 DEC	11 JUL 72	
	106AE			5867	USSR		MAR	
	107A	COSMOS 463		5661	USSR		DEC	
	1078			5662	USSR		DEC	
	107C			5663	USSR		9 06	
	1070			5669	8550		15 DEC 71	
	108A	CUSMUS 404		0,000	2550		י נו	
161	1086			5071	2550	בי בי בי בי בי	ט ט ט	
1261	7801			900 A	2000		ָ עַרָּ	
	1095			7 C C C C C C C C C C C C C C C C C C C	25.50		ָ בּ	
	1004	ARIEL 4		5675	Š			
	1098			5676	\$O		AUG	
	109C			5677	SO	_	ZY	
1761	1090			5979	Sn		001	
1971	112A	COSMOS 466		5687	USSR		DEC	
1971	1128			5688	USSR		DEC O	
	112C			5725	USSR		ZY	
	1120			5726	USSR		DEC	
	113A	COSMOS 467		5704	USSR		APR	
1971	1138			5706	USSR		F E B	
	AC11	MULNITA 1-19		2176	X8.00		22 CED 22	
1071	1156			5700	ASSU.	19 DEC		
	1150			5710	USSR			
1971	1178			5737	USSR		FEB	
1971	1170			5738	USSR		NAC	
	118A	COSMOS 470		5727	USSR	27 DEC	NAS	
1971	1188			5728	USSR		DEC	
	118C			5740	USSR		ZY	
	1180			5741	USSR		X Y	
161	118E			5742	USSR		Z I	
1971	1190			5962	USSA		FEB	
1971	1190			0103	0.55K		2 UCI 73	
1971	120E			0080	USSA	29 DEC		
1070	SENSMIT	ų						
V		?						
	0014	COSMOS 471		5764	USSR		Z	
	0018			5765	USSR		Z	
1972	001C			5767	USSR		ZYO	
1972	0100			5773	USSR		Z	
1972	0C1E			5774	USSR		247	
	001F			5806	asso.	12 JAN	26 JAN 72	
	0010			5812	USSR		2	
	002A			6010	SD:			
1972	1200 0020			0//0	<i>n</i> 0		7 2	
1972	200			11/6	n		2	

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NATIONAL		CATALOG				
DESI GNATION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1972 LAUNCHE	LAUNCHES (CONT.)					
1972 0020		5772	Sn	-		
1972 004A	COSMOS 472	5804	USSR			
		5805	USSR		MAY	
1972 005A	HEOS-A2	5814	ESRO	NYT IF		
1972 0058		5815	sn		SEP	
1972 005C		5817	Sn		SEP	
1972 0050		5818	SO			
1972 005E		5819	Sn		2 SEP	
	COSMOS 473	582,1	USSR		F 100	
		5822	USSR			į
	LUNA 20	5835	asso.	4.	בי ה	# •
		5837	USSR		17 FEB 72	
		5838	X8.00		בו נו	ć
		T 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	X880		27 628 72	*
	COSMOS 474	20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3550		בו עוני	
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		D 0	3550 9581			
1972 0090		, c	8880			
		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	50		MAR	
		20128	ASSO.			
		8786	ş n	3 MAR	AUG	
	COSMOS 477	5862	USSR	4 MAR	MAR	
		5863	USSR	4 MAR	MAR	
		5864	USSR	4 MAR	MAR	
		5865	USSR	4 MAR	MAR	
1972 013E		5882	USSR	4 MAR	MAR	
		5883	USSR		MAR	
1972 014A	TD-1A	5879	ESRO		ZY	
		5880	SO	12 MAR	001	
		5881	ESRO		A V	
		4 1 () () () () () () ()	ESKO	17 MAR		
		70 AC	08.81			
	COSMOS 4/8	0000 4000	X880		4	
9510 2/61		0000 00000	999	IS MAR	N Y	
		000	SSSO	15 MAR	MAR	
		5910	USSR			
		5915	USSR	15 MAR	MAR	
		5888	Sn	17 MAR	APR	
1972 017A	COSMOS 479	5894	USSR		APR	
		5895	USSR	22 MAR		
		5901	USSR		2	
1972 6170		5902	USSR		> Q	
1972 0175		5911	USSR			
1972 020A	COSMOS 481	2906	USSR		SEP	
		5908	USSR	25 MAR	_	1
	VENERA 8	5912	asso.		3 3	r Z
a		5913	asso	Z7 MAR		
1972 G21C		5914	USSR	_	29 MAN 72	

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	DECAY		5 MAY 81	APR	APR	FEB	APR	APR		APR			ם נו נו	2) XAV 82	V 0	404		APR	APR	APR	APR		30 AUG 72	N Y	MAY	APR	200	APR	APR	22 APR 72	¥ 04	APR	Apr	APR 7	9 MAY	;	12 MAY 72	ב ק	304		\ \ \ \ \	7 MAY 7	XX	¥	¥		¥	
	LAUNCH			31 MAR					3 APR		3 APR						4 APR			6 APR									14 APR						16 APR		How or		21 400	> \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \					S MAY			
	SOURCE		USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	10 T T T T T T T T T T T T T T T T T T T	32888	as sii	9551	essn	USSR	USSR	USSR	USSA	USSR	USSR	2550 2571	asso	USSR	NSSA	USSR	USSR	USSR	25 SD	SSO	USSA	Sn	Sn	s n		600	8551	esso	8557	asso	asso	asso	USSR	USSR	USSR	USSR	
DECAYED OBJECTS	CATALOG NUMBER		5919	5920	5921	5923	5924	5925	5926	7750	4 CO 4	4008	0000	5930	5931	5000	5940	5933	5934	6002	- ଅନ୍ୟକ୍ତ 	\ 5000 6 F O M	50 80	5945	5946	5949	6008	ଓ ଦେଶ ହ	540.87 8.40.88	07.00	6011	6012	0009	6001	6009	95056 4003	500	5000	6013	6016	6017	6018	6023	6024	6025	6026	5027	
	NAME	LAUNCHES (CONT.)	COSMOS 482				COSMOS 483					SDET 1						COSMOS 484			INTERCOSMOS 6	# # WORNOO						COSMOS 486					APOLLO 16		APOLLO 16	3083AIELL11E	COSMOS ABY	•		COSMOS 488								
INTER-	NATIONAL DESIGNATION	1972 LAUNCHE	1972 023A						1972 0240		1972 0254							1972 026A			1972 0274	1972 0275							000 2/61							1972 0318								1972 034E			1972 C34H	

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DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1972 LAUNCHES	ES (CONT.)					
972 0368		6022	assn	17 44 4	74 747	
1972 036C		6039	SSO			
		0000	USSR		2	
	MOLNIYA 2-2	6031	USSR	19 MAY	MAR	
		6028	USSR		Ž	
1972 037C		6059	NS SR	•	N S	
		0500	asso.	φ.	Z O	
		2500	USSR	0 (× X	
		100 V	0.55K	•	3	
	COSMOS 491	6035	8550 8551	1	1 50N 7	
		9E09			Z > X	
1972 038C		6038	USSR		X	
		6046	USSR		25	
		6047	USSR	-	25	
		6048	USSR		5	
		6037	Sn		Š	
1972 040A	COSMOS 492	6409	assn:			
		0000	assn.		N N	
		0000	S S S S		Z	
		460	xs so		27 JUN 72	
	COSMOS 493		SSSO		5 =	
		4909	USSR		2	
		6056	AS SD		3 50N	
1972 043E		6162	USSR	23 JUN	MAR	
1972 0448	CUSMUS 445	9090	USSR	-	₹	
		6062	asso		Ş	
		8000	USSR.	-	₹ :	
		5000	XX 0	23 JUN	8 JUL 72 7 1111 73	
	COSMOS 496	9909	USSR			
		6067	USSR	-		
		6083	US SR	-	3	
	PROGNOZ 2	6068	USSR	29 JUN		
9040 216		6909	USSR	-	AUG	
		0200	ussa.		AUG	
		1/09	SSSO.	•		
	INTERCOSMOS 7	200	2000	NOC 62	֓֞֝֟֓֓֓֟֝֟֓֓֓֟֟֓֓֓֓֓֟֟֓֓֓֟֟֓֓֓֓֓֓֓֟֓֓֓֟֓	
		6078	ayy:	200	20 001 00	
		6081	SSSO		י מירי	
	COSMOS 497	6076	USSR		N N	
		6077	USSR		MAR	
		6082	USSR	30 JUN	NAU	
	COSMOS 498	9809	USSR		NO N	
972 0514	004 904900	6087	asso		SEP	
		2600	asso:		₹	
		6091	USSR	\$. 10.	10 JUL 72	
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DESI GNATION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1972 LAUNCHES (CONT.)						
1972 0588D		7887	ns	23 JUL	17 MAR 80	
		7891	ns		SEP	
		7894	Sn		APR	
		7895	Sn	23 JUL		
		7896	SD:		2	
		7897	S :			
1972 058BU		7898	50	23 JUL	9 JUL 81	
		8002	ń <u>v</u>			
_		6062	r s	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ב ב ב	
		7914	s S	F)	200	
1972 0588W		7928	sn		MAY	
1972 058BX		7929	US		支	
1972 C58CA		7932	Sn	m		
		7936	Sn		SEP	
		7961	SO		12 JAN 80	
		7966	Sn	-	DEC	
		7973	SO		NO.	
		7975	Sn		MAR	
		7161	Sn		ZYS	
		7978	SO.		MAR	
		7980	SD.		FEB	
		8001	SD:	23 JUL		
1972 05800		7000 a	SO =	23 JUL		
		0000	î :	105 C2	5 2	
		3000 C	ñ v		21 JAN 60	
		0000	5 S		A D D	
		8087	S		*	
		8088) v		¥	
		6808	s n	23 JUL	NO.	
1972 0580R		8090	ŠN			
1972 05805		1608	SD	23 JUL	FEB	
		86093	Sn		支	
		8094	Sn		APR	
		9608	Sn	23 JUL	Z	
		8097	Sn		N O X	
		8000	sn :		FEB	
		9124	\$0		> 2	
-		8125	SO:	-		
1972 USBEE		9718	^ 10 :	23 JUL		
		0100	n :	•	¥ ;	
		6716	s :		ADN :	
		6310	s :	23 JUL	A Y	
		8317	SO		MAR.	
		8320	SD:		APR	
		8321	S :	23 JUL		
972		8374	S O	•	3	
1972 UBBEK		02/0	s :	-	A V	
1972 USBEI		200	A	23 JUL	22 NOV 82	

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DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1972 LAUNCHES (CONT.)						
1972 058EU		8378	Sn	23 JUL.	28 MAR 78	
1972 058EV		6379	Sn	-	KAR	
-		8380	Sn	23 JUL		
		6381	Sn	-	SEP	
-		8362	s n	23 JUL	13 OCT 80	
		8383	SO	-	2	
		48.84	s n	-	0	
		8385	SO.	23 JUL	> 2	
		8387	Sn	23 JUL	Z	
		8388	Sn			
		8389	so			
		8391	sn:	23 JUL	¥	
		2002	S i			
		8393	SD.	23 JUL	O MAR	
		8408	SO	23 JUL	APR	
		8433	٥n		AUG	
		8434	SO		NYS	
		8496	s n	-	APR	
1972 058FT		8698	SN	23 JUL	>	
		8499	SO		NOV NOV	
		8500	SO	23 JUL	Š	
		9501	Sn		NO	
		8502	SO		SEP	
		8503	s :	23 JUL	T Y	
		4000	\$:		¥ (
		9209	sn:		FEB	
		1000	S :	23 JUL	2 4 5	
		8008	s :			
1072 05905		A C M	S 0 2	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	36 204 C	
		7000 4 m m m	0 5		3 3	
10000 0101		# W	n 0			
		7 × 0	, v	1 E		
		0 4 5 6) - -		2	
		- 40 0 0	5 -			
		1 M	S		MAY	
		9559	s o	23 JUL	9nV 6	
		8570	s S		00	
		8571	SD	23 JUL	MAR	
1972 05862		8572	SO		₹	
1972 058HA		8573	SO	23 JUL	18 NOV 79	
1972 058HB		9574	SD		Š	
1972 058HC		8575	O.S	23 JUL		
1972 058HD		8576	SN		FEB	
1972 058HF		8578	SN	-	MAY	
1972 058HG		8579	SD		Z	
1972 058HH		8580	SO	m	> DN	
1972 058HJ		8581	SD	m	8 FEB 80	
1972 058HK		6996	Sn	m	24 FEB 79	
1972 058ML		o	SO	'n	_	

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DESIGNATION		NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1972 LAUNCHES	HES (CONT.)						
1072 OFRHM			3671	SD	23 JUL	14 MAR 80	
			9672		23 JUL.	2 JUL 78	
			9673	ns		N	
			9675	SD	•		
			9476	SO			
1972 058HU			9728	NS	23 JUL		
1972 058HV			9729	Sn		APR	
1972 058HW			9788	Sn	-		
1972 058HX			9970	NS			
1972 058HZ			9972	ns	•	Š	
1972 059A	COSMOS 512		6130	USSR	-	_	
1972 059B			6131	USSR		V O	
1972 060A	COSMOS 513		6135	USSR		AUG	
1972 0608			6136	USSR	-	¥0¢	
			6137	USSR			
			6143	USSR		904	
			6144	USSR		24 AUG 72	
			6147	USSR		9	
	EXPLORER 46		6142	s :			
			54.0	\$::	50 V C1		
			0140	\$0		¥ ¥ 4	
	COSMOS 515		0010	2000	904 81		
1972 0636			1010	9551		SED	
1972 0630			2010	USSB		SEP	
			6171	USSR	18 AUG	SEP	
	DENDA		6152	JAPAN		X	
			6332	JAPAN		APR	
			6156	SO			
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DECAYED OBJECTS	CATALDG		6733	6735	6734	4114	6780	6781	6782	0 4	្ត វិក្សា វិក្	5646	6647	8499	6799	6650	7000	0000	* **	9 40	6655	6656	6657	6658	1000	2000	9999	2999	6668	6674	6703	00/0	6685	6711	6712	6687	6688	0699	6773	\$ 000 100 100 100 100 100 100 100 100 100	6263	2076	01.29	6713	6714	6715	6716
	NAME																																														
		LAUNCHES (CONT.)									COSMOS 558		COSMOS 559				200 508502				SKYLAB 2		COSMOS 561			COSMOS 562		COSMOS 563				COSMOS 572							7	CLC SUMSUL		COSMOS 575		COSMOS 576			
INTER-	DESIGNATION	1973 LAUNCHE	1973 0275						1973 0277							0050 5761	0150 C/41							1973 0338	1973 0350					1973 0360	0000 C161								HACO 6761	1973 0418			1973 0438		1973 044B	1973 044C	1973 0440



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NATIONAL		CATALOG				
DESI GNATION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1973 LAUNCHES	ES (CONT.)					
1074 0006		6717	USSR	27 JUN	29 JUN 73	
		6719	USSR	•	亨	
		6720	US SR	•	Ž	
1973 044H		6721	USSR	•	¥,	
1973 045A	MOLNIYA 2-6	6722	USSR		AUG	
1973 0458		6723	USSR	-	YOU !	
		6724	USSR	-		
1973 0450		6741	USSR	-	SEP	
		6727	Sn	13 JUL	5	
		6728	\$n		ğ :	
		6743	NSSU OSS:	•		
		6744	35.50 26.60 26.60	21 JOL 22	20 JUL 13	
	COSMOS 577	0.470	2000	25 JUL 25 MII	9 0	
		70.70	8000		7 P	
1973 0480		6775	8880		90 V	
		6778	8551			
		6755	USSR	25 JUL	3	
		6756	es sus n	_	3	
	SKYLAB 3	6757	SO		SEP	4
		6758	us.		¥	
	COSMOS 578	6759	USSR	1 AUG	AUG	
		6760	USSR	1 AUG	AUG	
		6761	USSR	1 AUG	VQ6	
1973 0510		6762	AS SN	1 AUG	AUG	
		6763	USSR	1 AUG		
		6929	USSR		YOU.	
		6771	asso.		904	•
	CAPSULE	7223	USSR		MAN.	₽ ¥
		22.5	38.00	9 C	11 AUG 73	
		01.78	X 60 5		9 0	
1973 055A	COSMUS 3/3	\$970	45 S			
		5410 4705	97.5	21 406	AUG	
) F = 0	SSO			
E 20		6814	USSR		SEP	
	COSMOS 580	6793	USSR			
		6794	USSR	22 AUG	Š	
1973 059A	COSMOS 581	6798	USSR		SEP	
1973 0598		6429	USSR	-	P OC	
1973 059C		6801	USSR	24 AUG	VO E	
		6816	USSR		SEP	
		6817	USSA		ָהָ הַ	
	COSMOS 582	6802	USSR	28 AUG		
		6080	SSS		2	
		4000	asso.	-		
		6998	USSR	28 AUG	2 MAK 75	
		× 00 ×	2000	-		
	MOLNIVA 1-24	6605 6605	0558	30 406		
1973 0618		0000	RECO	-	2	

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NATIONAL DESIGNATION 1973 LAUNCHES (CONT.)							
IGNATION 3 LAUNCHES (CONT.			CAFALOG				
	z	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
	_						
			6807	USSR	30 AUG	8 OCT 73	
1973 0610			5808	USSR		SEP	
1973 001E			0012	USSE	30 AUG	SEP	
062A COSMOS	583		5089	SSSD	30 AUG	12 SFD 73	
0628			6810	USSR	-	SEP	
0620			6811	USSR		SEP	
063A C05M05	584		6818	USSR		SEP	
973 0638			6819	USSR	6 SEP	SEP	
1973 0630			0820	asso.			
			0821	1888 1888 1888 1888		SEP	
			0000	2550	6 SEP	SEP	
			1 m	X000			
			6827	6551	1 G 4	ו נייני	
066A COSMOS	587		6832	asso		7 7	
			6833	USSR		SEP	
			6834	SSS		SEP	
			6854	USSR		8 OCT 73	
•			6855	USSR	21 SEP	Š	
1 7010s A100 1	v		0000	asso:		SEP	E
			0000	2000	27 550	27 357 73	
			040	essn		Z 2	
			6837	Sn	27 SEP		
070A C0SM0S	296		6856	USSR		100	
			6857	USSR	3 0CT	100	
070C			80	USSR	3 OCT	00.1	
1973 071A CUSMOS	597		0 0 0 0 0	885D			
			0.00 N	USSR		0C	
			D 10 00 00 00 00 00 00 00 00 00 00 00 00	US SE		8 OCT	
			0000	SSS .		001	
CASA COSMOS	90		6666	2002			
0728	;		3000	מי יי		16 UC	
			4000	9 5 5		֓֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֓֓֓֓֓֓֓	
			6871	es sn	۰ ۵	ב ב	
973 072E			6872	USSR			
073A COSMOS	599		6867	USSR		28 OCT 73	
			6868	USSR	15 OCT	100	
			6869	USSR		0CT	
0730			6873	USSR		OCT	
074A COSMOS	009		6873	USSR		23 OCT 73	
			6874	USSR		00	
			6887	USSR	16 OCT	100	
			6888	USSR		001	
074E			6899	USSR		007	
075A COSMOS	601		6875	USSR	16 OCT	AUG	
			6876	USSR		VON 9	AXA
973 0750			6880	USSR	16 OCT	28 MAR 74	

INTER-		DECAYED OBJECTS				
NATIONAL DESIGNATION	NAME	CAT ALGG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1973 LAUNCHES (CONT.)						
1973 075D		6881	USSR	16 OCT	4 DEC 73	
		6882	USSR	16 OCT		
1973 0756		0883	USSR	16 OCT	9 E	
		\$ \$ \$ \$ \$ \$	asso asso		4 FFB 74	
		6890	USSR		DEC	
		6891	USSR		MAR	
1973 0754		6892	28SD		4 DEC	
		6697	USSR	16 OCT		
		6923	SSE CONTRACTOR		19 NOV 73	
	7	6877	USSR		3	
		6878	USSR		9	
		6879	USSR		DEC	
0760		8080	USSR		Z	
1973 UTA CUSMUS 602		ଦ୍ୱଞ୍ଜନ	USSR		100	
		0880	USSR			
		0000	200	20 001		
		3080	S S		29 OCT 73	
		6902	s n			
		0069	USSR		NO	
		1069	USSR		NO.	
1973 079C		6903	USSR		0CT	
		4004	USSR		00	
		\$ 50.00 \$ 50.00 \$ 50.00	USSK	27 OCT	10 NOV 73	
	S 10	6911	9557		2	
0829		6912	USSR		200	
082C		6915	USSR		DEC	
1973 083A COSMOS 605		6913	USSR		NO.	
2000 C/AT		4100	USSR		> 2	
		* 400 C	USSE	31 OCT	16 JAN 74	
		6469	USSR		7 X	
		6956	USSR		DEC	
		6917	USSR		NYS	
		6918	USSR		245	
1973 UBOBN		7070	SD:			
		2.702	SO		APR	
1973 0860X		0607	SO:			
		7107	s :	A 200 4	A Y	
		7100	F 4	2 2		
		7201	50) NO.	2 2	
		7204) <u>v</u>		ر ا ا	
1973 086FP		7205	9 S			
		7206	Sn	NON 9	220	
		7207	ns		MAY	
1973 086FS		7208	Sn	AON 9	~	

	501414)	378103	HUNST	DECAY	NOTES
DESIGNATION NAME		SOURCE	LAGNCA	2000	20163
LAUNCHES (CONT.)					
086FY	9700	Sn	9 NOV		
087A COSMOS 607	6926	USSR			
0878	6927	USSR	-	>	
087C	0669	USSR		Ş	
0870	6945	USSR	NON OI	2	
087E	9469	USSR		>	
0884	6928	Sn	-	2 ¥	
989	6956	Sn		> 0 2	
0.880	6931	SO		OE C	
089A MOLNIYA 1-25	6932	USSR		MAY	
	6933	SSD		NYS	
0890	\$669	USSR		> 2	
2000	6935	USSR	14 NOV	26 JAN 74	
0.000	0469	USSR	NON \$1	AUG	
COOL SKYLAB 4	6936	US	16 NOV	8 FEB 74	ğ.
	6937	Sn	16 NDV	2	
COSMOS 608	6941	USSR		支	
	6942	USSR	XON 02	23 MAR 74	
005 COSMOS 609	E #69	USSR		DEC	
)	4469	USSR		DEC	
0920	6963	USSR	21 NOV		
0920	4969	USSR		OEC C	
093A COSMOS 610	6950	USSR		SEP	
0938	6951	USSR	27 NOV	>	
093C	6962	USSR		Š	
094A COSMOS 611	6952	USSR	28 NOV	2	
0948	6955	USSR	_	¥ (
095A COSMOS 612	6953	USSR		9	
0958	6954	USSR			
095C	6968	USSR			
0950	6969	USSR		ָ מַנְיּי	
	0269	USSR		11 DEC 73	
096A COSMOS 613	1969	CSSX		2 (
0.968	0969	asso.			
	7103	OSSR		X X	
097A MOLNIYA 1-26	6958	US SE			
0978	6969	OSSA		ָ צ	
097C	6961	USSR		ָ בּ	
0460	7178	USSR		APR	
099A COSMOS 615	6971	USSR	13 DEC	W	
8660	2269	USSR		Z	
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101A EXPLORER 51	6977	SN	16 DEC		
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102A COSMOS 616	660	USSR		DEC	
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1973 L	AUNCHE	LAUNCHES (CONT.)					
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	1038		5869	S S S S	19 050	20 DEC 73	₩
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	105A	COSMOS 625	6995	USSR		247	
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27.0	1001		7010	USSR		NY	
2 4 0	1005		7011	USSR	21 DEC		
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	0001		7001	USSR	25 DEC	ZY	
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1974 L	LAUNCHES	S					
	002A	SKYNET 2A	7096	<u>¥</u>	9		
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	0020		7099	S		- 1	
	003A	COSMOS 629	7100	asso		2 4	
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	0046		6117	US SR		FEB	
	005A	COSMOS 631	7100	USSR		FE8	
1974 0	0058		2110	X900			
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1974 LAUNCHES	IES (CONT.)					
1974 027E		7287	SSR	29 APR		
		N	USSR		10 MAY 74	
1974 0276		7289	USSR		MAY	
1974 0298		7387	USSR		支	
		7388	USSR			
1974 030A	COSMOS 652	7292	USSR	15 MAY	MAY	
1974 6308		7294	USSA			
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1974 030E		7311	USSR	15 MAY	\$5 NOL 3	
1974 030F		7310	USSR			
		7312	USSR		HAY	
1974 031A	COSMOS 653	7293	USSR	15 MAY	27 MAY 74	
1974 6318		7295	USSA	15 MAY		
1974 031C		7296	USSR	15 MAY		
1974 032B		7395	asso		4 AUG 74	
1974 032C		7396	USSR	17 MAY	30 AUG 74	
1974 032D		7397	USSR		SEP	
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	COSMOS 655	7306	USSR			
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INTER- NATIONAL DESIGNATION	1974 LAUNCH	1974 08980				1974 089CW	1974 0890F				1974 090D			1974 0906	1074 0914									1974 095A			974	974		974	1974 0905							976			1974 1005			1974 100H			

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DESIGNATION	Z	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
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			9118	USSR			
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			7608	USSR		29 APR 75	
			7628	USSR		APR	
			7630	USSR			
			7634	USSR		APR	
			7656	USSR		18 APR 75	
974			7657	USSR		APR	
			7658	USSR		MAY	
			7661	USSR		APR	
			7662	USSR		SEP	
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			7635	USSR		MAR	
			7640	USSR		OCT	
	COSMOS 702	N.	7606	USSR		29 JAN 75	
			7607	USSR		247	
			7609	USSR		ZY	
	COSMOS 703	m	7611	USSR	21 JAN		
1975 0038			7612	USSR	ZI JAN	AUG	

	LAUNCH DECAY			JAN 3 JUL	JAN 26 DEC	ADN 6 NAL		JAN 22 OCT	JAN 11 JAN	JAN 14	JAN 4 FEB	JAN 21 SEP	JAN 9 APR	N 45	JAN 3 7EB	JAN 31	JAN 6 OCT	JAN 13 SEP	JAN 10 DEC	JAN 2	NAL. UE. NAL.	JAN 25 APR	JAN 20 APR	T NYC	JAN 22 JAN	JAN 22 NAT	8 8	JAN 27 JAN	JAN 18	NAU 31 JAN	JAN 30 JUN	AN 11 NAL	AAN NAL	JAN 15 APR	K77 00 K	JAN 21 DEC	JAN 21 0CT	JAN 9 HAY	JAN 11 AUG	7 JUL	JAN 16	JAN 8 HAY	13 7 18	2 JAN 28 DEC	2 JAN 21 APR
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DECAYED OBJECTS	CATALOG NUMBER		2006	\$006	9006	9026	9027	8206	0806	9031	9032	9033	4E06	90.35	9000	8806	6806	9041	9282	9283	4 C C C	9286	9287	9288	9289	0626	9504	9295	9536	9297	0000	0300	9301	9302	9000	9000	9307	9308	9309	9310	9311	9312	10 mg	9316	31
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	INTER- National Designation	1975 LAUNCHES (CONT.)	1975 004CL					1975 00405							1975 GC40A			1975 004DF			1975 004DR					1975 004DR					1975 00402 1975 004FA				1975 00455			1975 004EK	1975 004EL				1975 CO45R		

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INTED			DECAYED DBJECTS				
NATIONAL			CATALOG				
DESIGNATION	_	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1975 LAUNCHES (C	(CONT.)						
1075, 004°V			8.180	<u>.</u>	NA1. CC		
			9319) n		4 MAY 80	
1975 004EY			9321	ns n		FEB	
1975 00462			9322	SO		APR	
			9324	Sn	-	8 SEP 79	
			9325	Sn		00.1	
			9326	Şî (APR	
			1350	S ()		Y	
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			4964	s :		HA	
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			50 00 00 00 00 00 00 00 00 00 00 00 00 0	S	NAL 22		
			4000	s o		FEB	
			9686	s o		N N	
1975 0046J			9687	SD		>0 2	
1975 004GK			9683	s o		SEP	
1975 004GM			0696	SO			
1975 004GN			9691	ns		25	
1975 004GP			9705	ns	22 JAN	APR	
1975 00460			9706	SD		DEC	
1975 004GR			7076	Sn		>0N	
1975 60465			9738	SO			
			9709	so	22 JAN		
			9712	SO		245	
			9713	Sn		¥,	
			9714	s n		Z Y Y	
			5715	SO		¥	
			9716	s n		> 0 2	
			9717	s o	22 JAN	APR	
			6466	s ·		0C1	
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004HF			10307	Sn		Z Y	
005A	COSMOS 704		7617	USSR			
			7618	USSR		FEB	
			7619	USSR		NY 1	
			7620	USSR		L NAL	
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			7031	2850	23 JAN	FEB 7	
3600 G/61			/632	USSR	m	FE8 7	

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	LAUNCH		23 JAN	-	-			NAL OE				9 6 7 7								12 FEB			12 FEB					20 FEB	26 FFB				12 MAR									21 MAR				26 MAR	1
	SOURCE		USSR	USSR	USSR	ASSO	USSR	USSR	US SR	A880	2000	25 50 05 51	USSR	USSR	USSR	SN	Sn	Sn.	SD :	0.550 0.550	ess:	SSD	USSR	USSR	USSR	JAPAN	NAPAL	asso.	* S S S S S S S S S S S S S S S S S S S	SSSO	US SR	USSR	USSR	WSSD :	USSR	2000	85511	SSO	USSR	USSR	USSR	USSR	USSR	USSR	USSR	asso	
DECAYED OBJECTS	CATALOG NUMBER		7644	7649	7623	7624	7626	7627	7637	7638	9007	C#0/	7641	7642	7643	7650	7651	7652	9	7664	2667	7007	7669	1672	7673	7671	7674	7675	7676	7689	7690	7691	7692	7693	7701	2077	7606	7697	7698	7699	7700	7717	7719	7725	7726	7705	7077
	NAME	LAUNCHES (CONT.)			COSMUS 705				COSMOS 707				MOL NIVA 0-10							COSMOS 709						SRATS (TAIYO)		COSMOS 710				COSMOS 719					057 SUMSO									COSMUS 721	
INTER-	NATIONAL DESIGNATION	1975 LAUNCHE	1975 BRSH	, _{(C}		1975 0068	1975 0078					1975 0080					1975 011C					1975 0130				1975 014A			1975 015B	1975 0150			1975 0188				1975 0104							1975 019H	1975 019J		

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		DECAY				200		2		¥0€	FEB	AUG	SEP	Ž		2 .	\ ¥	¥ ;	_	2 30 VAN OF	¥ ¥		Ž	Š	3	200	3		20 CEG 76		Z 7	100		SEP	SEP	ב צ	7 OC 75	֓֞֞֜֜֞֜֜֞֜֜֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֓֓֡֓֡֓֓֓֓֓֡֓֡֓֡֓֡) T	MAR			00.1	2	Ž	N O	18 JUN 75	S	
		LAUNCH				X			7 MAY				17 MAY				7 MAY 05		- A W - C					-		21 MAY		24 MAY							24 MAY	24 HAY		_			4		24 MAY						
		SOURCE		9	35 S	รัก	SD	ns	SO	FRANCE	FRANCE	FRANCE	FRANCE	7	TXANCE	37844	n v	3 2	assn	USSR	USSR	USSR	USSR	USSR	USSA	2000	8550	assi	assa	USSR	USSR	USSR	USSR	USSR	2550 2550	9550	USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	
DECAYED OBJECTS	CATALOS	NUMBER		7781	7782	7788	7789	7791	7792	7801	7802	7803	4 000 ×	9000	000 CC	7807	7808	7809	7810	7811	7812	7813	7879	7680	7881	7818	7819	7911	7912	7948	7949	7953	7958	7000	204	8019	8020	8021	8022	8023	8024	8025	8038	7821	7829	7830	1920	7921	
		NAME	S (CONT.)			EXPLORER 53			Č	FULLUA	x 0 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -								COSMOS 731							SOYUZ 18																		COSHOS 740				146 30 30 J	
INTER	NATIONAL	DESIGNATION	1975 LAUNCHES	1975 0368				BBS0 C761	1975 0380					1975 039F							1975 0410	1975 0410					1975 0448				1975 044F												1975 0440						

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LAUNCH		3 JUN	NOL E	NOC E	NOC E	3 JUN	S JUN	NOC S	S JUN	S JUN	S JUN	8 TON	80 S		•	Ċ	•						12 JUN 21	-	200	-					6		25 JUN	25 JUN							27 JUN	-		3 JUL	3 JUL	_	3 101	3 JUL	4 ML	* JUL	
SOURCE		USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	ns	Sn	Sn	USSR	USSR	USSR	USSR	USSR	NSSU.	2880 1	ASSO:	X550	\$ S	98	9551	8550	8551	SSO	SSO	USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	asso.	assii	SSO	USSR	USSR	
CATALOG NUMBER		7900	1062	7913	7951	7952	7903	4062	7905	7906	8400	7916	7917	8411	7918	7919	7965	7925	7926	1927	7972	7981	7987	7950	7954	8423	7970	1161	786/	2007 8004	000	7 7 60	2000	9001	8012	2007	1662	7992	7993	7994	8013	3014	9008	8007	- CC			4 K C &	* 000 B	8010) 6 1)
M # K	LAUNCHES (CONT.)	ř	COSMUS 142				0 1 4 1 4 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1	•						DESCENT CRAFT	,			CDSMOS 743								DESCENT CRAFT	080		COSMOS 745		C05M05 746						200000						842 30M 30V	COMMON AND					046 307307	COSMOS /45	
INTER- NATIONAL DESIGNATION	1975 LAUNCHES	,		0040 950	1973 0480			4740 C/71			3640 6761																										1975 0608		7000 0401											1975 062A	1975 062B

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NATIONAL DESIGNATION	N	CATALOG E NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1975 LAUNCHES	HES (CONT.)					
1975 062C		8107	USSR	4 JUL	27 AUG 81	
		8016	USSR	-	AUG	
		8017	USSR		AUG	
1975 065A	S0YUZ 19	0000	USSR		뒻 :	B C ‡
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	COSMOS 750	8036	assn	, -	SEP	
1975 0678		8037	USSR		À Q	
1975 067C		8045	USSR	17 JUL		
	COSMOS 751	0708	USSR		AUG	
		8041	USSR		₹	
	COSMOS 752	8043	USSR		FE8	
	!	4408	USSR		>	
	MAO 3	8053	PRC		SEP	
		4608 6100	D24	26 JUL	YOU	
	CUSMUS 753	9050	asso		YOU !	
1970 C/18		0000	USSR	31 JUL 15	V	
		1008	250		9 :	
		**************************************	r av v	10 TO	13 AUG 75	
	COSMOS 754	6908	asso		PO V	
		8070	USSR	m	YAC.	
		8071	USSR		AUG	
1975 0730		8129	USSR		AUG	
		8130	USSR		AUG	
		6131	USSR	13 AUG	AUG	
	VIKING LANDER	1 9024	Sn		Ę	B D#
		81.35	Sn		SEP	
	COSMOS 757	61.4	USSR		SEP	
		80 PT 0	USSR		SEP	
2010 6141		O 1 1 1 0	38.0		N 1	
1975 0785		0010	25.55 25.55	27 AUG	S SEP 73	
		7.40	8550	27 AUG	ָ ער מיני	
	MOLNIYA 1-31	8187	SSSO) Q	
		8188	SSO		>0X	
1975 079C		9189	USSR	2 SEP	NO.	
1975 0790		8190	USSR		2	
1975 079E		8274	USSR		ž	
1975 080A	COSMOS 758	8191	USSR		25 SEP 75	
		8192	USSR	5 SEP	10 SEP 75	Ѐ⇔
		8200	asso	5 SEP		
		8201	USSR	5 SEP	SEP	
		9202	USSR		SEP	
		8203	USSR		SEP	
		8204	asso.		SEP	
		8205	USSR	5 SEP	-	
1975 0803		8206	USSR	SSEP	9 SEP 75	

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NATIONAL		CATALOG				
DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1975 LAUNCHES (CONT.)	•					
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		8208	NSSO.	4 10 1	֓֞֝֝֝֞֜֜֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֓֡֓֓֓֓֓֡֓֡֓֡֓֡֓	
		8209	US SK		9 SEP 73	
		2126	2660			
4000 G/61		9211 A212	2550	י פריק מילי		
		200	8551		SEP	
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		0176	2000			
		9419	\$600 C		7 6	
		8220	USSK E	2 (1)	ָ בַּי	
		8221	OSSR		7	
		8222	USSR		SEP	
1975 08CAB		8223	USSR		SEP	
1975 080AC		8224	USSR		SEP	
1975 080AD		8225	USSR		SEP	
1975 080AE		8226	USSR	5 SEP	SEP	
1975 080AF		8227	USSR		SEP	
1975 080AG		8228	USSR		SEP	
1975 080AH		8229	USSR			
1975 080AJ		8230	USSA		SEP	
		8231	USSR			
1975 080AL AURA		8232	USSR		SEP	
1975 080AM		8233	USSR			
1975 080AN		8234	USSA	5 SEP		
1975 080AP		82.35	USSR	5 SEP		
		8236	USSR	5 SEP	SEP	
1975 080AR		8237	USSR		9 SEP 75	
1975 080AS		8238	USSR			
1975 080AT		8239	USSR	5 SEP	SEP	
		8240	USSR		SEP	
1975 080AV		8241	USSR		SEP	
1975 086AW		6242	USSR	5 SEP	9 SEP 75	
1975 080AX		8243	USSR	5 SEP		
1975 080AY		8244	USSR		SEP	
1975 080AZ		8245	USSR		SEP	
1975 080BA		8246	USSR			
		8247	USSR		SEP	
1975 080BC		8248	USSR		SEP	
1975 080BD		8249	US SR		SEP	
		8250	USSR	5 SEP	SEP	
		8251	USSR		SEP 7	
		8252	asso		SEP 7	
		8253	USSR	5 SEP	SEP	
		8254	USSR			
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		8256	USSR	5 SEP	9 SEP 75	
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	LAUNCH		1 OCT	1 00.1	1 OCT	1 OCT	1 001	1 001					8 OCT			12 051	16 OCT		16 OCT		17 OCT		17 001					29 OCT		20 02				29 OCT			29 OCT						29 OCT	•	29 OCT	.
	SOURCE		USSR	USSR	USSA	USSR	USSR	OSSA	A SE	5 E	USSR	USSR	USSR	S C	s ::	s o	S	S O	SN	USSR	USSR	200	USSE	8880	USSR	USSR	USSR	SSN:	2550	asson		USSR	USSR	USSR	8550	USSR	USSR	USSR	USSR	USSR	USSR	ASSD	USSR	USSR	USSR Section 1	US SK
DECAYED OBJECTS	NUMBER		8345	8343	8350	8351	8362	m vom d	ה היה היה מי	450	8358	8359	8414	2000	4000	0.148	8367	8371	8372	8369	0270	6573	7.1 40 F. 40	8416	8417	8622	8623	40.00	6268	8627	8628	8629	8630	8631	# F 90	8634	8635	8636	8637	8638	8639	8640	8641	8642	•	* 1
	ZAME	(1.)	S 774						10FD 54											COSMOS 776				COSMOS 777																						
1 2	DESI GNATION	LAUNCHES (CONT.)	COSA COSMOS	0958	0 95 C	0950	095E	095F	0964 FXDI DRFD		0978	097C	0260	A890	9660	0660	1008	1000			1018	7101	1016			102C	1020	102E	1026	102H	1023	102K	102L	E 201	102P	1020	102R	1025	1021	1020	102V	102W	102X	1027	7201	10248
INTER-	DESIG	1975	1975		1 975	1975	1975	1975	1975	1975	1975	1975	1975	2761	2767	1975	1975	1975	1975	1975	1975	1076	1975	1975	1975	1975	1975	1975	1075	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	27.61	2601

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INTER-			DECAYED DBJECTS				
NATIONAL			CATALOG				
DESIGNATION		NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1975 LAUNCHES	LAUNCHES (CONT.)						
1975 1080			8460	USSR	21 NOV	11 DEC 75	
			8461	USSR			
	COSMOS 781		8444	USSR		NOV	
			3445	USSR		DEC	
			2447	USSR	_	25	
٠,			10 de	asso.		NO.	
1975 109E			0.444.0.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4	USSR	21 NOV	9 OCT 77	
			8777	8550 9251		2	
-			E090	USSR		SEP	
			7000	USSR			
			3666	USSR		NAU	
			10433	USSR			
	COSMOS 782		8450	USSR		DEC	
			8451	USSR	25 NOV	DEC	
			3486	USSR		<u> </u>	
			6487	USSR	25 NOV	FEB	
			8518	USSR			
A111 6/61	*		2452	D&C		U .	
			ກ ເ ຄ ເ	PRC	26 NOV		
1975 1110			# 10 to 00 t) and		> :	
			n 44 0	, c		2	
			00 40	, a	20 NOV	26 NOV 75	
	COSMOS 784		E 448	SSSO			
1975 1138			8464	USSR		OE.	
1975 1130			8465	USSR		DEC	
			8466	USSR	3 DEC	8 DEC 75	
			8481	USSR	3 DEC	DEC	
			4848	USSR	3 DEC	DEC	
			8485	USSR	_	DEC	
			8467	S D	_		
			8468	s O	♦ DEC	MAY	
			8469	S :	◆ DEC	S S	
		•	84.70	SO:	4 DEC	Z	
1975 1158	SUMSCHOOL	*	8473	USSR	11 060	27 FEB 83	
			3 F 4 6	K 100			
			0.474 0.475	¥ 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		2	
			8765	SSO		V V	
			8766	USSR		¥	
			8477	USSR		DE C	
1975 116C			8480	USSR	12 DEC	FEB	
1975 1178			8478	Sn			
1975 117C			8479	S n		NON	
1975 1188			8483	ns		DEC	
1975 119A	MAQ 5		8488	PRC		Z	
~			8491	PRC			
-	COSMOS 786		8489	USSR	16 DEC	29 DEC 75	
1975 1208			9490	USSR	16 DEC		

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COSMOS 788

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SOURCE

DECAYED DBJECTS

CATALOG NUMBER

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INTER-NATIONAL DESIGNATION 1975 LAUNCHES (CONT.)

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DESI GNATION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1976 LAUNCHES	S (CONT.)					-
3610 3501		2,662	SSO	5 FEB	100	
		3663	USSR	5 FEB		
		8664	USSR	5 FEB	001	
		8665	ASSU.	5 FEB	A UG	
		8666	USSR		Z S	
		8667	USSR		MAR	
		8668	USSR		001	
		8669	USSR		5	
		8670	USSR	5 FEB	ğ	
		8671	USSR		3	
		9672	USSR	5 FEB	00	
		8673	USSR			
1976 0125		8674	USSR	n .		
1976 013A	COSMOS 802	3681	USSR		T .	
		8686	USSR		F 1	
		9706	USSR		ו ה ה	
1976 013D		8707	USSR	11 FEB		
		8708	USSR		F. E. E.	
1976 0148		8689	USSR	12 FEB		
1976 014C		8690	as so		ָ ט ט ט	
1976 015A	COSMOS 804	8698	2550	•	1	
1976 0158		8695	USSR	0 (
		9600	SO:	> (
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	COSMOS 805	A 00 00 00 00 00 00 00 00 00 00 00 00 00	2000	20 658		
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	COSMUS SOR	4 1 4	asso		MAR	
1976 0206		8768	USSR	10 MAR		
		8769	USSB		MAR	
		8771	USSA		25 MAR 76	
		8742	USSR			
		E 47.60	USSR		5 APR 76	
		8750	SO		MAR	
	OUR SOMEON	8758	USSR		MAR	
		8759	USSR	18 MAR	MAR	
		8760	USSR		M A	
		8761	USSR		MAR	
	MOLNIYA 1-34	8762	USSR		¥	
		8763	USSR		APR	
		8767	USSR	19 MAR		
		8792	USSR		APR	
		8770	SO		MAY	
	COSMOS 810	8772	USSR		APR	
		8773	USSR	26 MAR	~	
		8796	USSR		APR	
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NOTES

DECAY

LAUNCH

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DECAYED OBJECTS

CATALOG NUMBER

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NATIONAL DESIGNATION 1976 LAUNCHES (CONT.)

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INTER			CATALDG				
DESTONATION		NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1976 LAUNCHE	LAUNCHES (CONT.)						
1976 0377			9513	USSR		SEP	
			9514	USSR	28 APR	17 OCT 77	
	COSMOS 817		8823	USSR		MAY	
			8824	USSR		MAY	
			8825	USSR	5 MAY	¥¥	
1976 0400			6.84.3	USSR		× :	
1976 040E			8849	USSR			
1976 040F			8850	USSR		× X	
1976 0418			8834	USSR	12 MAY		
1976 041C			8837	USSR		SEP	
1976 041E			8847	USSR		₹	
	COSMOS 818		8851	USSR	18 MAY	7 MAR	
1976 0448			8852	USSR		5	
1976 045A	COSMOS 819		8853	USSR		Z :	
1976 0458			8854	USSR	20 MAY	¥	
			8855	USSR		×	
1976 046A	COSMOS 820		8856	USSR		Z	
1976 0468			8857	USSR		\ \ \ \ \	
1976 046C			8853	asso	ZI MAY		
1976 0460			8869	USSR		2	
			8870	USSR		2	
	COSMOS 821		8862	USSO.		3	
			100 00 00 00 00 00 00 00 00 00 00 00 00	USSR GOOD	20 MAY	20 VOL 7	
				2000 H	X W 42		
			0,000	9881		200	
1970 0485			07.00	US SP		Ž	
	COR MUSES		100 cc	SSS		¥0€	
			9866	USSR	28 MAY	_	
	COSMOS 824		9877	USSR			
			8878	USSR	8 JUN		
			8880	USSR			
			8881	USSR		Z S	
1976 052E			8905	USSR		Ž	
1976 052F			8906	USSR	80 Y		
1976 0526			8907	USSR	6 0	Z	
			8883	S		A UG	
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			8902	SO		3	
	COSMOS 833	_	20 C C C C C C C C C C C C C C C C C C C	2000	200		
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1976 0564	SOMSODARINI	15 15	8003	USSR	NOC 61	NO.	
			9	SSO		247	
9790 9761	7 TIN 14 D		3 6	9550	22 JUN	60	
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INTEK" NATIONAL DESIGNATION		NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1976 LAUNCHES	ES (CONT.)						
1976 0578			7 T O O	15.58 15.58	NOT 22	24 JUN 76	
			90506	USSR		AUG	
			0906	USSR	-	AUG	
			9275	USSR	-	V OC	
			9276	USSR	22 JUN	5 SEP 76	
			1126	X6.50	22 JUN 22	ב ב ב	
			4530 5256	X6.60	-	4116	
1976 057K	45 0 202200		0 7 0	xee.	25 JUN 45	2 =	
	,		5108	asso		Š	
926			8917	SO		25	
	COSMOS 835		8922	USSR		支	
			8925	USSR	-	S,	
			9014	USSR	29 JUN	20 JUL 76	
976			9015	USSR	29 JUN	14 JUL 76	
			9018	USSR	-	JY L	
	COSMOS 837		8927	USSA	-	NOV	
			8268	USSR	1 JUL	AUG	
			8929	USSR	1 JUL	뒺	
			9930	USSR	1 JUL	3	
			8931	28 80	•	SEP	
	COSMOS 838		6932	USSR	2 Y	3 2	4
			5000	2000		3 JUL 70	בי בי
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			10051	850)	
			10001	USSR		X Y	
			£5001	SSSO		N	
			10054	USSR			
			10055	USSR		2 DEC 77	
			10056	USSR	-	NO NO	
1976 063N			10057	USSR	-	APR	
1976 C63P			10058	USSR	•	SEP	
1976 0630			10076	USSR	•	FEB	
			10077	USSR	•	Y I	
			10078	asso	•	ò i	
			10079	USSR	•	3 001	
1976 3630			10080	USSR	•	SEP	
1976 063V			10081	USSR	•	APR	
			10082	USSR	•	SEP	
			10083	USSR	•	₹ 	
1976 063Y			10097	USSR	•	X X	
1576 0632			10098	USSR	•	3	
			10099	USSR	•	SEP	
			00101	asso.	2 JUL 2 1		
1976 063AC			9	USSR	•	۰ ۱	
1976 063AD			10102	USSR	2 JUL	22 001 77	

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1976 L	LAUNCHES (CONT.)						
0 926	063AF		F0103	95511		7	
	063AF		19104	SSN		3 2	
	063AG		10105	8550		₽ne	
	063AH		10106	USISR	2 JUL		
	0634J		10107	USSR		SEP	
	063AK		10108	USISR	2 JUL	AUG	
	063AL		90101	asisn		SEP	
	063AM		10110	USISA		3 SEP	
	063AN		10122	USSA			
	0.63AP		10123	USISR	2 JUL	AUG	
	06340		10124	USSR		AUG	
	063AR		10125	USSR	-	戋	
	ι Λ		10126	USSR	-	ZY	
	064A SQYUZ 21		4608	USSR	ه کلا	AUG	#
	0.648		8935	USSR	-	J J	
	UOSA		9006	S n	8 JUL	3 DEC	
	9000		2000	sn	9 JUL	APR	
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			10401	USSR	00	Z O O	
0 0/61	DOSA CUSMUS 840	0	9019	asso.		₹	
	0000		9020	8880 1881:			
	0.214 COSMOC 843		1206	SSS C	14 JUL	ặ	
	EOFE	•	7 4 4 6 7	45.50 65.00			
	072A COSMOS 844	•	2,000	8550		30 ALIC 74	
		•	6 4 C O	2550	22 JUL		4
	072C		9000	essn		¥119	÷ ć
	0720		9065	asso	•	\$0.4	
	072E		9906	USSR	•	¥0€	
0 9261	072F		9067	USSR	22 JUL	AUG	
	072G		8906	USSR		V OV	
	0.72H		9069	USSR		AUG	
	0723		90.70	USSR	-	AUG	
	072K		9071	USSR	22 JUL	AUG	
0 0 0	0 /21		9072	USSR		VO6	
	1000		5000	asso.		AUG	
	27.50		# P 0 0	28.50	-	YOU !	
	0720		0.00	X 0 0 0 0	•	Ž :	
	0728		9027	5000	22 JOL	2 YOU 10	
	0725		9206	999			
	0721		6206	8551	•	2 416 76	
	072U		0800	185B	22 .11		
1976 0	072V		9081	USSR	•	YOU S	
	072W		9082	USSR	-	AUG	
	072X		9083	USSR	22 JUL	AUG 7	
	0727		4806	USSR	•		
	9722		9085	USSR	22 JUL	AUG 7	
0 9261	072AA		9086	USSR	22 JUL	AUG 7	

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1 0 4 2		DECAYED OBJECTS				
NATIONAL		CATALOG				
DESI GNATION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1976 LAUNCHES (CONT.)						
1976 072CD		9137	USSR	22 JUL	2 AUG 76	
		9138	USSR	22 JUL		
1976 072CF		9139	USSR	-		
1976 072CG		0716	USSR	•	AUG	
		9141	USSR	-	AUG	
		9142	USSR	22 JUL	AUG	
		9143	USSR	•	AUG	
		0144	USSR		P OC	
		9145	USSR	22 JUL	P ∩€	
		9146	USSR	-	AUG	
		9147	USSR		P OC	
		9148	USSR	22 JUL		
		9149	3550		AUG	
		9150	USSR		¥00	
		9151	USSR	22 JUL		
		9152	USSR		P Ce	
		9153	USSR	-	P OC	
		9154	NSSN		YOU V	
		9155	USSR	•	YOU.	
-		9156	USSR		V 00	
_		7516	USSA	22 JUL	AUG	
1976 U720A		8016	SSS CONTRACTOR	22 JUL 33 III		
		\$0.14 0.41 0.41 0.41 0.41	2000		2	
		2017	x	22 111	2 AUG 76	
		01.61	3550		2	
		# 19 T O	asso		9 O	
		9164	asso	22 JUL 22	AUG	
1976 072DH		9165	USSA		AUG	
1976 0720J		9166	USSR	22 JUL	AUG	
1976 0720K		9167	USSR		AUG	
		9168	USSR	22 JUL	AUG	
		6916	USSR		AUG	
		91.70	USSR	22 JUL	AUG	
		9171	USSR		V OC	
		9172	USSR		V O	
		-4	USSR		V OC	
		91.74	asso.	-	Y Y	
		→ .	USSR 1		V	
002/0 0/61		-	8880	22 JUL.	904	
		97.00	X500	22 JUL	2 406 70	
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			2000	22 JUL	2 AUG 70	
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NATIONAL		CATALOG				
DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1976 LAUNCHES (CONT.)						
1976 072EF		9187	USSR	22 JUL	2 AUG 76	
-		9168	USSR	-	AUG	
1976 072EH		9189	USSR Ersi		\$ C	
-		9191	858D	22 JUL	2 AUG 76	
		9192	USSR		AUG	
		9193	USSR			
		4616	USSR		AUG	
_		9195	8880		AUG	
		9616	USSR		YOU !	
1976 U72ER			OSSE	22 JUL	90 V	
1976 072FT		2000	25 SD	22 ML	2 AUG 76	
		0000	45.55 45.51		2 2	
		9201	as so	22 JUL	YOU V	
		9202	USSR		V C	
1976 072EX		9203	USSR		AUG	
1976 072EY		9204	USSR	22 JUL	₽ D V	
1976 072EZ		9205	USSR		AUG	
		9206	ussa			
		9207	US SR	22 JUL	V OC	
		9208	USSR		AUG	
		9209	USSR		VOC.	
1976 UZFE		9210	USSR COST	22 JUL 33 III		
		2120	X5.50	22 JOL	0/ 904 7	
		9212	X555		9 0	
		7170	8550			
		6.70	9550			
		9219	asso		9 O	
		9220	USSR		AUG	
		9221	USSR		5 AUG 76	
		9222	USSR	22 JUL		
		9223	USSR		AUG	
-		9224	USSR		P OC	
1976 072FS		9225	USSR	22 JUL	5 AUG 76	
		7660	מייים			
		1224	as of	22 305	7	
		9229	USSB		AUG	
		9230	92511		ALIG	
		9231	SSO	-	V O	
		9232	USSR		AUG	
1976 C72GA		9233	USSR	22 JUL	5 AUG 76	
1976 072GB		9234	USSR	22 JUL	5 AUG 76	
		9235	USSR		AUG	
		9236	USSR		P Ne	
		9237	USSR	-	V OC	
		9238	USSR	N.		
1976 07266		9239	USSR	22 JUL	5 AUG 76	

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LAUNCHES (CONT.) C72GH 072GJ 072GK	H K K	NUMBER				NOTES
H 7 9 9						
נפר נפר		9240	USSR		AUG	
49		9241	USSR	22 JUL	5 AUG 76	
072GL		2126	SSSU SSSU	•	Y Y	
072GM		555¢	USSR	•	AUG	
072GN		9245	USSR	٠		
072GP		9246	USSR	22 JUL	AUG	
07269		9247	ussa 	22 JUL		
072GR		9248	8880		P (
07261		\$ 50 C	75.50 63.51	22 JUL	5 AUG 70	
0.2561		0520	2000		2 4	
0726V		2552	X5.50		P 10 0	
072GW		9253	assn		V S	
072GX		9254	USSR	•	AUG	
072GY		9255	USSR			
07262		9256	USSR		5 AUG 76	
072HA		9257	USSR		5 AUG 76	
072нв		9258	USSR		5 AUG 76	
072HC		9259	USSR	22 JUL		
072HD		9260	USSR	•	AUG	
072HE		9261	WSSD :		YCO.	
072HF		9262	SSO.		§ OV	
072HG		9263	8550 600:	22 JUL	9 0 1	
0.724		900¢	2550		2	
2H270		9265	28.85	22 JUL 22	5 AUG 70	
H27.0		0331	AS 50	-		
21.1.10 21.2.10		2332	951		9014	
072HN		3000 8000 8000	85.50	22 - 101	3 Aug	
072HP		4886	USSR USSR		3 406	
072HQ		9335	USSR		AUG	
072HR		9336	USSR		P OC	
072HS		9337	USSR		AUG	
072HT		9338	USSR	•	3 AUG	
072HU		9339	USSR	•	YOU !	
0 / ZHV		0986	3880		3 AUG	
21770		T + 10 0	3000	•	904	
XH270		7 to 6	2000	22 JUL	13 406 70	
0.224		0 4 6 6	K 000	•		
07272		****	2000		2	
07218) 40 10 10 10 10	9551	22 11		
0721C		0347	9880		¥U6	
0F220			8551		3 Aug	
072JE		0 40	8880		9n¥	
072JF		0320	88 ST		3 AUG	
072.16		100 PG	: ex	•		
072JH		9352	assn		AUG	
15710		10 mg	4557	22 181	V	

		DECAYED OBJECTS				
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			77.000			
1976 LAUNCHES	ES (CONT.)					
1976 072JK		45000	USSR	22 - 3411	13 AUG 76	
1976 072JL		9355	USSR		AUG 7	
		9356	USSR	22 JUL		
		9357	USSR	•	AUG	
1976 0721		90908 0 8 8 0	USSR	•	VOC.	
		0000	USSK	22 JUL	13 AUG 76	
		9361	USSA	•		
1976 072JT		9362	USSR			
		9363	USSR			
		9364	USSR	-		
		9365	USSR		AUG	
		9366	USSR	22 JUL	AUG	
		9367	USSR		AUG	
7620 9201		80 PO 1	USSR			
		707A	USSR	•		
		0.56	35.55	22 JUL	3 AUG	
		2150	USSB GSSB		13 AUG 76	
		9373	8880		9 14	
		9378	USSR	22 141	A U6	
		9370	USSR	-	AUG	
		9380	USSR	-	AUG	
		9381	USSR		AUG	
	MOLNIYA 1-35	9040	USSR	23 JUL	HAY	
94/0 0/48		9050	USSR	•	00	
		9051	USSR		SEP	
	544 SQ#SQ2	200A	X 555	•	1 SEP	
	5	# K C C C	1000	27 JUL	200	
		# W CO	3880		28 FEB 81	
		9267	ussa		ָ ק ק	
1976 075E		9268	USSR	•	FEB	
		9665	USSR		J.	
		9718	USSR		27 MAR 78	
1976 0754		9789	USSR	27 JUL	Š	
	THICKCOMES TO	6000	USSR		₹ :	
		00 m	¥ 50	27 JUL		
	COSMOS 847	4126	65.51		20 NAC 21	
	,	0215	0.50			
		9516	USSR	904 4 908	\$ 00 V	
1976 079D		9376	USSA		AUG	
		7756	USSR		AUG	
	LUNA 24	9272	USSR	9 AUG	AUG	Œ
		9273	USSR	_	AUG	
1976 0810		3274	USSR		S AUG	
	LINA 24 DESCENT COAFT	9/26	10.5K		V	
	148	9280	USSR	y AUG	25 AUG 76	#
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NATIONAL			CATALOG				
DESIGNATION	NO.	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1976 LAU	LAUNCHES (CONT.)						
1976 0828	90		9281	USSR	12 AUG	24 AUG 76	
976	1 0		9328	USSR		AUG	
			9374	USSR	12 AUG		
	· W		9375	USSR		AUG	
	A COSMOS 849		9382	USSR		24 APR 78	
	8		10 mm m	8880			
			0407	35.50	18 AUG	16 MAY 77	
	A CUSMOS 850		\ D C C	2000	-	2	
			2000	3000			
1976 0854	A CUSMUS 851		7077	as sn			
	505		4 A C C C C C C C C C C C C C C C C C C	25.50		SEP	
	پ د		1010	USSR		AUG	
	و بر		9412	USSR		SEP	
	iñ.		9413	USSR		SEP	
1976 086F	<u>ı</u>		9414	USSR		SEP	
1976 087A	A MAG 6		9394	PRC		NO.	
1976 0878	ខ		9395	PRC		F E0	
	3A COSMOS 853		9398	USSR		O E	
	9		9399	asso.	1 SEP	10 OCT 76	
	, C		0046	USSR		T 4 6	
	,		N 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	¥660		N A	
	5 4II 7		n 4000	S S	SEP		
1976 0895	ي پ		0040	s n	1 SEP	KAR	
			9410	Sn		HAY	
	A COSMOS 854		9405	USSR		SEP	
			9076	USSR		SEP	
1976 0900	20		9422	USSR	3 SEP	SE	
1976 090D	00		9423	USSR	3 SEP		
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042G L033I USSR 30 MAY 23 FEB 042G USSR 30 MAY 16 APR 042J L0333 USSR 30 MAY 15 FEB 042K L0334 USSR 30 MAY 15 FEB 042L L0335 USSR 30 MAY 15 FEB 042M L0336 USSR 30 MAY 16 APR 042D L0349 USSR 30 MAY 16 APR 042D L0349 USSR 30 MAY 16 APR 042D L0349 USSR 30 MAY 16 APR 042D L0369 USSR 30 MAY 18 APR 042B L041B USSR 30 MAY 22 MAR 042B L049B USSR 30 MAY 18 APR 042C L049B L049B 1049B 18 APR				10330	USSR		FEB	
042H L0332 USSR 30 MAY 18 APR 042J USSR 30 MAY 11 MAR 042J USSR 30 MAY 15 FEB 042L USSR 30 MAY 15 FEB 042L USSR 30 MAY 4 FEB 042P USSR 30 MAY 23 FEB 042P USSR 30 MAY 16 JUN 042P USSR 30 MAY 16 JUN 042R USSR 30 MAY 16 JUN 042R USSR 30 MAY 18 APR 042L USSR 30 MAY 18 APR 042U USSR 30 MAY 18 APR 042U USSR 30 MAY 18 APR				10331	USSR	_	EB B	
042J 10333 USSR 30 MAY 11 MAR 042K 10334 USSR 30 MAY 15 FEB 042L 10335 USSR 30 MAY 15 FEB 042M 10337 USSR 30 MAY 23 FEB 042P 10337 USSR 30 MAY 16 APR 042P 10350 USSR 30 MAY 16 JUN 042P 1041B USSR 30 MAY 16 JUN 042S 1048T USSR 30 MAY 18 JUN 042C 1048B USSR 30 MAY 18 APR 042U 1049B USSR 30 MAY 18 APR 042U 1049B USSR 30 MAY 18 APR				10332	USSR		APR	
042K 10334 USSR 30 MAY 15 FEB 042L 10335 USSR 30 MAY 15 FEB 042L 10336 USSR 30 MAY 4 FEB 042N 10337 USSR 30 MAY 16 APR 042D USSR 30 MAY 16 JUN 042R 1041B USSR 30 MAY 16 JUN 042S 10487 USSR 30 MAY 18 JUN 042S 10487 USSR 30 MAY 18 APR 042U USSR 30 MAY 18 APR 042U USSR 30 MAY 18 APR 042U USSR 30 MAY 18 APR				10333	USSR		MAR	
042L 10335 USSR 30 MAY 15 FEB 042M 10336 USSR 30 MAY 4 FEB 042M 10337 USSR 30 MAY 23 FEB 042D 10349 USSR 30 MAY 16 APR 042Q 1041B USSR 30 MAY 15 MAR 042Q 1048Q USSR 30 MAY 18 MAR 042L 1049B USSR 30 MAY 18 APR 042U 1049B USSR 30 MAY 18 APR 042U 1049B USSR 30 MAY 18 APR				10334	USSR		FEB	
042M USSR 30 MAY 4 FEB 042N USSR 30 MAY 23 FEB 042N USSR 30 MAY 10 APR 042D USSR 30 MAY 15 MAR 042Q USSR 30 MAY 15 MAR 042S 1048 USSR 30 MAY 12 MAR 042S 1048F USSR 30 MAY 22 MAR 042U 1049B USSR 30 MAY 18 APR 042U 1049B USSR 30 MAY 18 MAR				10335	USSR		FEB	
042N USSR 30 MAY 23 FEB 042P 10349 USSR 30 MAY 18 APR 042P 1035R 30 MAY 15 MAR 16 APR 042P USSR 30 MAY 16 JUN 042S 1048F 30 MAY 22 MAR 042S 1048F 1048F 18 APR 042U 10494 10494 18 APR				10336	USSR		4 FEB	
042P USSR 30 MAY 16 APR 0420 USSR 30 MAY 15 MAR 042R 1041B USSR 30 MAY 15 UN 042S 10487 USSR 30 MAY 22 MAR 042T 1048B USSR 30 MAY 18 APR 042U 10494 USSR 30 MAY 18 MAR				10337	USSR		F.E.	
0420 USSR 30 MAY 15 MAR 042R 30 MAY 16 JUN 042S 10487 USSR 30 MAY 22 MAR 042T 10488 USSR 30 MAY 18 APR 042U 10494 USSR 30 MAY 18 MAR				10349	USSR		APR	
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042T 10488 USSR 30 MAY 18 APR 042U 10494 USSR 30 MAY 18 MAR				10487	USSR		Y	
042U 10494 USSR 30 MAY 18 MAR				10488	USSR		APR	
				10494	USSR	¥	Z Y	

DECAYED OBJECTS

		4 DECAY		40 240 7	18 APR	27 MAR	13 JUN	11 SUN	16 JUN	60 (, S	21 JUN 77	25 JUN	23 JUN	23. JUN	21, JUN	1 JUL	22 NO. 22	NH 25	27 JUN	1 301	17 AUG	14 JUL	12 JUL	29 JUN 77	20 JUN	5 FEB	18 JUN	18 JUN	28 AUG	: 1	18 JUL	5 JUL	27 JUN	-	9 5	24	DOV *	23 DEC	29 JUN		13 JUL	100 8	2 JUL 2	2 JUL 2 :	10.00	12
		LAUNCH		AVM OF	30 MAY					31 MAY		200		-		-		NOC OT			10 JUN	16 JUN			NOT 91		•	-	NOT 21	XOS 81				•	22 JUN		24 JUN			-	-	•	•	-	•	7	10r
'n		SOURCE		USSR	USSR	USSR	USSR	USSR	USSR	SSO	2000 T	3000	8550 8550	USSR	USSR	USSR	USSR	25 5 C	asso	USSR	USSR	USSR	USSR	s :	so so	FRANCE	USSR	USSR	8550	3880 8880	asso	USSR	USSA	USSR	USSR	95511	asso	USSR	SO	SN	USSR	USSR	USSR	USSR	USSR	4550 4551	ussa
DECAYED OBJECTS	CATALOG	NUMBER		10405	10496	10497	10030	10031	10032	10045		05001	10073	10074	10084	10040	19001	E4001	10044	10088	10090	10060	10066	50001	10075	10064	10069	10065	89001	1907	10072	10808	10086	10087	10127	10133	10093	10094	10111	10112	10116	10115	10117	10118	00101	10130	10131
		NAME					4				ĸ	,				•												60		>												N			4	•	
		z	CHES (CONT.)				COSMOS 914				COSMOS 015					COSMOS 916										SIGNE 3		COSMOS 918	OLO SOMBOL				COSMOS 920									COSMOS 922			CO SUMSUS	,	
, Q L	NATIONAL	DESIGNATION	1977 LAUNCHES	1977 0424	_	_				1977 0430						1977 046A	1977 0465		1977 046E	1977 046F			1977 0470	1977 0480					1977 0508			1977 0510			1977 0520		1977 0548							1977 0580			

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			DECAYED DAJECTS				
INTER-			0				
DESI GNATION	_	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1977 LAUNCHES	ES (CONT.)						
			20.00	9221		3 DFC 77	
1977 0630	700 SOMSON		35101	35.5			
			10140	3000	12 JUL		
_			10162	USSR		¥	
			10163	USSR		26 JUL 77	
			10145	SO	•	MAR	
			10156	sn		6 NOV 81	
			10176	ns	14 JUL	22 MAY 79	
_			10182	SO		ZYS	
1977 065R			10187	SO	14 JUL	001	
1977 0651			10189	Sn	14 JUL	FEB	
_			10191	Sn.	14 JUL	DEC	
1977 065X			10193	Sn	14 JUL	APR	
1977 0652			10196	O.S			
1977 065AA			10197	Sn		¥	
1977 065AC			10199	SN			
1977 065AD			10200	ns	14 JUL	MAY	
1977 065AJ			10205	SO	14 JUL	AUG	
1977 065AN			10209	Sn		SEP	
1977 065AP			10210	ns		Ş	
1977 065AS			10213	Sn		APR	
1977 065AU			10215	Sn			
1977 065AV			10216	Sn		Ş	
_			10222	Sn.		2	
1977 06588			10224	Sn		Ž	
1977 0658C			10225	Sn		901	
_			10228	sn		Z .	
			10231	SO		₹ :	
			10236	SO			
_			10242	S :		A P	
			10245	S .		2	
			10247	s :		904	
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			10253	so:		7 E	
			\$620T	n (1		
			10250	s u			
1977 0650			10263	s v	100 41	2	
			20201) =		3	
1977 00500			1000	S 5	100	AUG	
			10304) S		AON	
			10307	S		ž	
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			10310	SO	٠	₹	
			10342	SD	14 JUL	ZYS	
			10343	SD		100	
_			10344	SD	•	2 JUL 79	
1977 065DW			10347	SD	14 JUL	J,	
1977 06502			10390	SO	14 JUL	ø	
1977 065EA			10468	SD	14 JUL	15 SEP 80	

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3	LAUNCH DECAY NOTES		14 JUL 16 MAR 81	JUL 7 JAN	שה 12 אחר	14 JUL 10 NOV 61	JUL 10 NOV	JUL 20 AUG	JUL 27 JUN	JUL 30 JUL	٦ :	AUI 27 NOV	FEB	JUL 29 JUL	JUL 24 JUL	12 MAY		JUL 2 JAN	2 AUG	JUL 24 JUL	JUL 3 AUG	3 406	- 1	JUL 26 JUL	JUL 26 JUL	JUL 5 JUN	23 JUL 25 MAR 78	JUL 5 AUG	JUL 2 AUG	JUL 17 AUG	JUL 11 AUG	DOA E	22 AUG	AUG 28 AUG	AUG 5 SEP	3 AUG 8 UCT 77	NOT SO	AUG 21 19 001	AUG 25 AUG	AUG 25 AUG	AUG 6 SEP	
DECAYED OBJECTS CATALOG	NUMBER		10472 US			10475	10482 US				10631	50 65007 F7405	7				10151 USSR						10157 USSR				10277 USSR				8550 8550 8550					10275 USSR		-				
	DESIGNATION NAME	1977 LAUNCHES (CONT.)	1977 065EE	0		1977 065EH	1977 065Eq					1977 065FE		0668	066C			1977 068H		0698		0690	1977 070A COSMOS 933				071E	1977 0728 COSMOS 454			1977 072F	0738				0740		1970 1791 150 30M307	0778			

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NATIONAL		CATALOG				
DEST GNATION	ZAZ	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1977 LAUNCHES	ES (CONT.)					
1977 078E		10324	asso	24 AUG	7 SEP 77	
		10325	USSR			
		10296	O.S.		NOV	
1977 0800		10297	Sn			
1977 080E		10298	Sn		OE C	
1977 081A	COSMOS 947	10299	USSR		SEP	
1977 0818		10300	USSR			
1977 081C		10301	USSR		SEP	
1977 0828		915C1	USSR	30 AUG	SEP	
1977 082C		10317	SSO	30 AUG	SEP	
1977 0825		10318	USSR	30 AUG	SEP	
1977 083A	COSMOS 948	10319	USSR	2 SEP	15 SEP 77	
1977 0838		10320	USSR	2 SEP	SEP	
1977 083C		10356	USSR	2 SEP		
1977 0830		10357	USSA	2 SEP	SEP	
1977 085A	COSMOS 949	10 326	USSR	6 SEP		
1977 0856		19327	USSR	6 SEP	SEP	
		10328	USSR	6 SEP	SEP	
	COSMOS 950	10351	AS SO		SEP	
		10.353	USSR		G.	
_		40001	8850			
		10399	USSB			
_		10400	asso		00	
	COSMOS 953	10359	USSR		SEP	
1977 0898		10360	USSR	16 SEP	SEP	
		10380	USSR		SEP	
1977 0890		10381	USSR		SEP	
	COSMOS 954	10361	USSR		NYO	
		10364	USSR		3	
		10366	USSR		SEP	
		10367	USSR		SEP	
1977 0920		10368	USSR		SEP	
		10408	USSR		30 APR 78	
1977 092F		10484	USSR	20 SEP	16 JUN 78	
		10371	USSR	22 SEP		
1977 093C		10372	USSR		0CT	
1977 0930		10373	USSR		28 SEP 77	
1977 094A		10374	SO		8 DEC 77	
1977 095A	COSMOS 956	10375	USSR		27 JUN 82	
		10378	USSR		NOV	
1977 096A	INTERCOSMOS 17	10376	USSR		Š	
1977 0968		10377	USSR		SEP	
1977 0960		10379	AS SA		8 APR 78	
1977 097A	SALYUT 6	10382	USSR	29 SEP	29 JUL 82	
1977 0978		10383	USSR	29 SEP	S OCT 77	# d8
1977 097C		10384	USSR	29 SEP	3 OCT 77	
1977 0970		10533	USSR	29 SEP	22 FEB 78	
1977 097E		10545	USSR	•	24 APR 78	
1977 097F		10547	855H	20 050	AL AM CI	

		DECAYED OBJECTS				
INTER-						
NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1977 LAUNCHES (CONT.)						
HZ00 7201		10553	USSR	29 SEP		
211		10596	USSR		MAY	
1977 097K		10597	USSR		MAR M	
1977 097L		10598	USSR		FEB	
		10685	USSR		MAR	
1977 197N		10686	USSR		Y	
		10687	USSR	29 SEP		
		10738	asso:		20 APR 10	
		10740	15.58 15.58	20 550		
		1070	45.50 68.81		Ž	
1260 A161		10.01	9551			
0,50 //61		1033	8550		00.1	
		11034	US SR	29 SEP		
		11035	USSR			
		11036	USSR		HAY	
		11091	USSR		APR	
1977 097AA		11092	USSR	19 SEP		
1977 097AB		11093	USSR		2	
		11094	USSR	29 SEP	NY O	
		11095	USSR		O .	
		11096	USSR		3 k	
		11097	US SR	19 567	19 UCC /8	
		00111	85 S.I.			
		00011	3 y =			
1977 097AJ		11340	as so		MAY	
		14611	USSR			
		11342	US SR		MAY	
		11350	USSR	29 SEP	귉	
1977 097AP		11431	USSR		SEP	
-		11432	USSR		001	
		11433	USSR		16 JUL 79	
		11494	USSR	29 55.0) () () () () () () () () () (
		11400	8550		<u>ב</u>	
1977 09740		11468	asso	29 SEP		
		11469	USSR	29 SEP	100	
		11470	USSR			
		11471	SSO		00.1	
		11472	ussa		X X Y	
		11473	USSR		OCT	
		11480	USSR		2	
1977 097BC		-	USSR	29 SEP	0CT	
1977 09780		11493	USSR		P CO	
1977 09785		11494	USSR		O	
1977 097BF		~	3550	O		
		11500	#SSO	.	מ ב	
Э		11501	NSSN.	4000	י נו נו	
1977 (978)		11502	USSR	-	N L	

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1	֓֞֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֓֓֓֜֜֜֜֜֓֓֓֜֜֜֜֓֜֜֓֜
1	֡֝֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜
1	֓֞֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֓֓֓֜֜֜֜֜֓֓֓֜֜֜֜֓֜֜֓֜
1	֓֞֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֓֓֓֜֜֜֜֜֓֓֓֜֜֜֜֓֜֜֓֜

1			DECAVED OBJECTS				
INTER- NATIONAL			CATALOG				
DESTGNATION		NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1977 LAUNCHES	(CONT.)						
1977 0978K			11503	USSR	29 SEP	21 DEC 79	
			11504	USSR			
			11508	USSR		9CT	
N8760 7761			11523	USSR COLOR			
			11505	3000	20 50 50 50 50 50 50 50 50 50 50 50 50 50	97 VOV 79	
			11740	8550	-	3	
_			11832	USSR		SEP	
1977 09781			11893	USSR		SEP	
1977 097BU			11930	USSR		OCT	
			11931	USSR		00.1	
1977 0978W			\$10011	USSR	29 SEP	B SEP 80	
			11935	2000		֓֞֝֞֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֓֓֓֓֓֡֓֓֡֓	
			11030	X660		00 TO 41	
			24011	S S S S S S S S S S S S S S S S S S S			
			11047	2557		בי בי	
			11055	8550		֚֓֞֞֞֜֓֞֜֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֜֜֜֡֓֓֓֓֡֓֜֜֡֓֡֓֡֓֡֓֡֡֓֞֡֓֡֡֡֡֡֡	
			11956	asso		00.	
			11957	USSR		120	
1977 097CF			11958	USSR		24 SEP 80	
			11966	USSR		Ņ	
			11967	USSR		100	
1977 0970			11972	assn 	29 SEP	A 10 C	
			6/611	2000		3 3	
			11075	assu assu		7 17	
			12090	asso		NAL	
			12390	USSR		MAY	
1977 097C0			12391	USSR		2	
			12392	USSA			
			12393	USSR		APR	
			12394	USSR		MAY	
U0770 097CU			12395	asso	29 SEP	¥ .	
			12436	9331		27 MM 81	
_			12437	USSR		3	
1977 097CY			12438	USSR		Z S	
			12439	USSR		룃	
_			12440	USSR	29 SEP	N O S	
			12441	asso.		Y A	
			1244	USSR	29 SEP	₹ :	
			12476	us sa		3	
			12477	USSR		SEP	
			12478	RSSO.			
			6/ 4/21	as so		3	
			12488	SSSU.	29 SEP		
20100 1101			69421	3000		֓֞֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	
	CAC SOMPO			X000	7 SEP	4 SEP 81	
			0000	xe co		3	

			DECAYED OBJECTS				
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NATIONAL DESIGNATION		NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1977 LAUNCHES	ES (CONT.)						
1977 5988			10386	esso		5 OCT 77	
770			10387	USSR	30 SEP	oc I	
0 770			10388	USSR		001	
770			10406	USSR	30 SEP	15 OCT 77	
1977 COST	C		10401	USSR		5	
770	20106		10401	USSE	0 001		¥D¢
77.0	840 204207		70 % OF TO	USSK	- i	<u></u>	
077			10403	25.52			
977 1			10401	88.80 88.81		A NOV V	
1 776			10400	6550	; ; ;		
977			10427	SSO			
977 1			10428	S S S O		N N	
1977 1000			10429	USSR		NYS	
7	COSMOS 959		~	NSSN	21 OCT		
-			10420	USSR		NOV	
977 1			10421	USSR		> 0	
977 1	1 SEE 1		10422	SO		SEP	
977 1			10423	ESA		SEP	
077 1			10424	Sn	22 OCT		
-	COSMOS 960		10430	USSR	25 OCT	001	
1 226			10431	USSA		NO.	
1 116			10432	USSR		Z S	
1977 104A	CUSMUS 961		46401	USSR	26 OCT	26 OCT 77	
			10435	3550 3000		100	
-			13450	USSR			
770			104.50	25.50			
1 779			10450	X000	23 100		
1 776	COSMOS 964		00000	SSU		9 6	
977 1			10409	25SD	4 DEC	DE C	
			10500	USSR		NYS	
211			1)522	USSR		DEC	
			1)523	USSR	4 DEC	OE.C	
	COSMOS 965		10501	USSR		DEC	
716			10503	USSR		> N	90¢
			10505	USSR	8 DEC	APR	
210			10682	NSSN		APR	
1977 1115			10683	USSR		¥	
			10741	USSR		5 MAY	
			24/01	USSR		8 7/L	
1			10780	USSR	8 DEC	¥	
מייי דבסי			19782	USSR		֝֟֝֟֝֟֓֟֝֟֝֟֓֟֓֟֓֓֟֟֓֓֟֟֓֓֓֟֟֓֓֓֓֓֟֓֓֟֓֓	
			10789	#SSD	8	2	
٠.			56/01	NSSO :		25	
→ .			10797	USSR		777	
			10807	USSR		~	
111 //6			9809	USSR	<u> </u>	NOO	
7 1111			41861	USSR	8 DEC		
1377 111R			10815	USSA	8	8 JUL 79	

INTER-			DECAYED OBJECTS				
NAT I ONAL			CATALOG			240	2010
CEST GNATION		NAME	NUMBER	SOURCE	LAUNCH	DECAT	8010M
1977 LAUNCHES	(CONT.)						
			V	2551		JUL	
1111 7761			1001	assn	8 DEC	20 JUN 78	
277 1111			8090	บรรห		J	
			10859	USSA			
			10801	USSR		J,	
			10892	USSA	8 DEC	Ž	
			10908	NSSR		_	
			10909	USSR		DEC	
977 111AA			10910	USSA		DE 0	
977 111AB			10923	USSR			
			13924	USSK	8 DEC	904	i
977 113A	S0YUZ 26		10506	USSR		Z	m #
			10507	USSR		DEC	
977 115A	COSMOS 966		10510	USSA		DEC	
977 115B			10511	USSR		DEC	
977 115C			10534	as sn		היי	
977 1150			13533	USSR			
0811 776			11072	S T		5	
	COSMOS 969		19527	asso.			
			10530	#SSO		ָ : ני	
			10549	0886	20 05		
			rago!	25 SO	20 05.		
			10001	9551		M A	
077 1216			10532	SSO	21 DEC	DEC	
			1000	USSR			
	COSMUS 973		10540	USSR			
			10542	USSR		NYS	
			10543	USSR		OE C	
			10558	SS	27 DEC	NYC -	
977 124E			10559	USSR		11 JAN 78	
978 LAUNCHES	s						
1079 CO1A	COSMOS 974		10554	USSR		19 JAN 78	
			10555	USSR		Z	
			10556	USSR	NAL &	247	
1976 0010			10601	USSA		ZY	
1978 CC1E			10602	USSR		Z	
	50YUZ 27		10560	USSR		Z Y Y	⇔ ₩
			10583	USSR	10 JAN		
	COSMUS 984		10592	USSR			
1978 0050			10543	USSR		2 (
1978 C08A	PROGRESS 1		13603	USSA		9 :	
1978 ONBIR			10604	USSR		Z (
1978 009A	MOLNIYA 3-9	ġ.	10605	USSR		APR	
9578 BC98			10606	USSR		MAR	
1978 009C			10608	USSR			
978 C09D			10610	USSR		W W	
	COSMOS 986		10607	USSR		F E 8	

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1 0 1 2			DECAYED OBJECTS				
NATIONAL DESIGNATION		A M M	CATALOG	SOURCE	LAUNCH	DECAY	STICN
1979 LAUNCHES	ES (CONT.)						
1978 010E			13609	assn	NAL. 25	95 UAN 28	
	MAO &		10611	bac		FEB 7	
			19612	PRC		FEB	
			10633	SO		FEB	
1978 C134	CUSMUS 987		10639	8890		F E 8	
			13641	255D	NAU 15	4 FEB 78	
			10670	USSR		FEB	
			12671	USSR		FEB	
			10665	JAPAN	4 FEB	FEB	
			18316	NAGAD		>ON	
	COSMOS 988		10666	assn		FEB	
9510 9261			13007	USSR		FEB	
			10000	25.55	10 a	5 MAR 78	
			2007	20 ST			
			10680	2550 2550		N N	
			19681	SSO		FEB	
1978 0168			10724	us		§D.¥	
			13998	ns		200	
	COSMOS 989		10672	USSR		FEB	
			19673	USSR		FEB	
1978 6170			10690	SSS		X (
	00 61700		16001	2000		F. 69	i
	ų.		10004	0202	N MAK	0 MAN	B
			20001	2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	A MAK	¥ 0	
			10698	2000		404	
1978 025A	COSM0S 992		10699	SSS		Z V	
1978 (256			10700	USSR		MAR	
			10701	USSR		MAR	
			12197	SO			
			12229	Sn		ΜAY	
1978 CZ6CF			12238	s :	5 MAR	FEB	
1976 3266			65271	s ::		5 FEB	
			17301	500	K 0	17 AUG 81	
			12251	SO		8 FEB	
1978 U26CV			12252	50		A AN	
1978 026CW			12253	. s		DEC	
			12255	ns		1 JUL	
			12258	SO		1 JUL 81	
			12264	S O		10 DEC 81	
			12271	ns		NOV	
			12275	Sn		27 DEC 81	
			12281	S n	5 MAR	> 0 ×	
			12282	s :	S MAR	9 APR	
20 00	100		12230	80 i		4 OCT 8	
A/20 %/61			10725	0.55R	IO MAR		
n			07101	2000		I MAK 78	

トとしばなり						
NATIONAL		CATALUG	SOURCE	HOUNTH	DECAY	NOTES
DEST GNATION	E & Z	r di di			; •	
LAUNCHES (CONT						
226		19727	USSP			
24.60		10739	USSR	10 MAR		
029A		10733	SD		SEP	
029C		10737	Sn		Z Y	
030A COSMOS	366 50	10735	USSR	17 MAR	MAR.	
0308		10735	SSS		¥ 4	
		10770	USSR			
032B COSMOS	866 50	10771	USSK	SO MAK	¥ (
932C		13772	asso.	30 MAK		
0.320		12775	asso.	SO MAK	X 4 5 6	
33A COSMOS	666 50	10773	SSSO		12 APK 70	
0 339		10774	USSI)	MAR DE	2 4 4	
0.33C		10798	AS SO		¥ (
0.33D		10799	¥\$ \$ ∩		¥ 1	
C33£		10800	USSR		4 APR	
036A COSMOS	1001 50	10783	USSR		APR	
0.368		10784	USSR		APR	
036C		10804	NSSA	4 APR		
0.36D		13805	USSR	4 APR	MAX	
0.36E		13806	USSA	4 APR	APR	
036F		0.1801	USSA		MAY	
037A COSMOS	100 1 100 2	10785	USSR		APR	
0378		13786	USSR	6 APR		
0.37C		10790	USSR			
		10701	USSR		¥ ;	
040A COSMOS	105 1003	19811	USSA		- (C	
0408		19812	USSR	20 APR	Y C	
040C		10813	asso		¥ ;	
0400		13821	USSA.			
		10822	ASSO.	M 0 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	- U	
C41A HCMM	_	10818	s :			
6140		10819	۸ <u>۱</u>	0 -	2	
0450		51001	n :	- >	[
		41501	50			
	COSMOS 1004	6 # 60 T	X660	- > E	2	
0439		1 480 T	¥ 6 6 6	> 4 H		
C43C		82 P S S S S S S S S S S S S S S S S S S	X600)	\ \ \	
0430		10849	200			
043E		10850	25 S	,		
043F		10801	x660			
		26801	200	2 2	7 N	
046A CUSMUS	402 T 000	2000T	x 000		, L	
		1,3863	X600		3 3	
C48A COSMOS	40S 1007	10895	3880	A		
0480		10896	NS SO		E :	
048C		∞	USSR	o	¥	
0480		10921	assn	ø	MAY 7	
2840		10922	USSR	¥ 9		
	COSMOS 1008	10898	USSR	_	Z	
				:		

0	2	0	0	0	0	0	0	16	6	92	6	32	92	92	92	93	4	9	96	30	4	9	96	96	3	4	9.5	S.	9	ŝ	95	95	9	54	9	4	Š	0	96	69601	6	6

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DECAY

LAUNCH

SOURCE

DECAYED DBJECTS

CATALOS NUMBER

NAME

DESIGNATION

1978 LAUNCHES (CONT.)

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	J J	SEP	MAY	Z	-	\ \ \ \ \	2	¥ M	Z	Ş	MAY	Z S	25		Š	Š	Š	Š	z S	Š		N O O	N S S		₹		Ž	2	2 1	3 SEP	18 JUN 78	2 6		¥	AUG	א כ כ	3		31 JUL 78	12 JUL 78	6 JUL 78	7 JUL 78	AUG	Ŋ	11 DEC 78	30 AUG 78	23 A115 78
17 MAY																			NOS OI				12 JUN								15 JUN				27 JUN				28 JUN			2 JUL	7 JUL		14 JUL	14 JUL	118. 41
USSR USSR	USSR	USSR	esso	88SU	OSSE	3550 3550	2880	NS SN	USSR	NSSA	USSR	USSR	USSR	USSA	USSR	USSR	USSR	USSA	sn	USSR	USSR	USSR	USSR	Sn	SN	SN	sn	Sn	SO	USSR	asso.	s (n u		S	\$1	as sn	USSR	USSR	USSR	USSR	USSR	USSR	USSR	SO	ASSU	03311
10901	10902	10901	10904	90601	10906	10907	10915	10916	10928	10919	10920	10926	12927	10929	10939	10940	10963	10964	10943	10044	10945	10965	10966	10947	10948	13951	13957	10958	10959	10952	10956	5561	5525T	0 4 6 6 1	10000	50.22 20.22	10963	10969	13971	13972	13977	10978	62601	10980	10982	10985	4000
			COSMUS 1009				COSMOS 1010			C05405 1012					COSMOS 1021					COSMOS 1022										S0YUZ 29							SOVU7 30				C05M05 1026		PROGRESS 2				
1978 649C 1979 649D								O		0					1978 057A	1978 0578		1978 0570	1978 058C				1978 0590	1978 060A	1978 0608		1978 0600						1978 0648	1970 (640	2 4 5	2 0	4	0.70	978	670							1 0

THES (CONT.) CUSMOS 1028 CUSMOS 1028 PROGRESS 3 PIONEER PROBE PIONEE	20	LAUNCH 18 JUL 19 JUL 19 JUL 10 JUL	DECAY 20 JUL 78 4 SEP 78 7 AUG 78 8 AUG 78 9 DEC 79 9 DEC 79 9 DEC 79 9 DEC 79 23 OCT 78 15 SEP 78 28 AUG 78	NOTES
GONT.) ROGHESS 3 FIGNEER VENUS FIGNEER PROBE FIGNEER 11 FORMUS 1029 FORMUS 1031 FORMUS 1033	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$		JUL JUL SEP AUG AUG DEC DEC OCT NOV NOV	Э Э
PROGRESS 3 PIONEER VENUS MULTIPROBE BUS PIONEER PROBE PION	**************************************		JUL JUL AUG AUG DEC DEC DEC DEC OCT SEP SEP SEP SEP	Э Э
PROGRESS 3 PIONEER VENUS MULTIPROBE BUS PIONEER PROBE PION	\$\$\$50 \$\$50 \$\$\$50 \$\$\$50 \$\$\$50 \$\$\$50 \$\$\$50 \$\$\$50 \$\$\$50 \$\$\$50 \$\$\$50 \$\$\$50 \$		SEP AUG AUG BEC	Э Э
PROGRESS 3 PIONEER VENUS MULTIPROBE BUS PIONEER PROBE PION	8889 8889 8889 8889 8889 8889 8889 888		SEP AUG AUG BEC DEC DEC DEC DEC BEC BEC BEC BEC BEC BEC BEC BEC BEC B	Э С
PROGRESS 3 PIONEER VENUS MULTIPROBE BUS PIONEER PROBE PION	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		AUG AUG AUG AUG AUG AUG AUG AUG AUG AUG	Э С
PROGRESS 3 PIONEER VENUS MULTIPROBE BUS PIONEER PROBE PION	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		AUG BEC BEC BEC BEC BEC BEC BEC BEC BEC BEC	Э Э
PROGRESS 3 PIONEER VENUS MULTIPROBE BUS PIONEER PROBE PION	**************************************		AUG AUG AUG BEC BEC BEC BEC BEC BEC BEC BEC BEC BEC	Э Э
PIONEER VENUS MULTIPROBE BUS PIONEER PROBE PIONER	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$		AUG DEC	Э Э
PIONEER VENUS MULTIPROBE BUS PIONEER PROBE PIONEER PROBE PIONEER PROBE PIONEER PROBE PIONEER PROBE PIONEER PROBE PIONERR 11 COSMOS 1029 VENERA 11 COSMOS 1031 VENERA 12 COSMOS 1033	5 S S S S S S S S S S S S S S S S S S S		AUG DEC DEC DEC DEC DEC DEC AUG	Э Ф
MULTIPROBE BUS PIONEER PROBE PIONEER PROBE PIONEER PROBE PIONEER PROBE PIONEER PROBE PIONEER PROBE COSMOS 1029 VENERA 11 COSMOS 1031 VENERA 12 COSMOS 1033	S S S S S S S S S S S S S S S S S S S		AUG DEC DEC DEC DEC DEC DEC AUG	Э Ф
PIONEER PROBE PIONEER PROBE PIONEER PROBE PIONEER PROBE SOVUZ 31 COSMOS 1029 VENERA 11 COSMOS 1031 VENERA 12 COSMOS 1033	\$ 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		AUG DEC DEC DEC DEC NOV AUG	Э Ф
PIONEER PROBE PIONEER PROBE PIONEER PROBE PIONEER PROBE SOYUZ 31 COSMOS 1029 VENERA 11 COSMOS 1031 VENERA 12 COSMOS 1033 COSMOS 1033	8 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		DEC DEC DEC DEC NOV NOV	<u>я</u>
PIONEER PROBE PIONEER PROBE PIONEER PROBE SOYUZ 31 COSMOS 1029 VENERA 11 COSMOS 1031 VENERA 12 COSMOS 1033	s o o o o o o o o o o o o o o o o o o o		DEC DEC OCT SEP NOV AUG	. Н
PIONEER PROBE PIONEER PROBE SOYUZ 31 COSMOS 1029 VENERA 11 COSMOS 1031 VENERA 12 COSMOS 1033	S 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		DEC DEC DEC SEP SEP AUG	.
PIUNEER PROBE SOVUZ 31 COSMOS 1029 COSMOS 1031 VENERA 12 COSMOS 1033 COSMOS 1033	S D D D D D D D D D D D D D D D D D D D		DEC OCT SEP NOV AUG	B ⇔
SOYUZ 31 COSMOS 1029 VENERA 11 COSMOS 1031 VENERA 12 COSMOS 1033	8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8		SEP SEP NOV AUG	\$
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SOYUZ 31 COSMOS 1029 VENERA 11 COSMOS 1031 VENERA 12 COSMOS 1033	**************************************		SEP NOV AUG	Я
081A SOVUZ 31 081B C82A C0SMOS 1029 C82C C82C C82C C83B G84C 084C 084C 085A COSMOS 1031 C85C C85C C85C C85C C86B C85C C86C C86C C86C C86C C86C C86C C86C	32 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		NOV AUG	E &
CGSMGS 1029 VENERA 11 CGSMGS 1031 VENERA 12 CGSMGS 1033	28.82 28.82	26 AUG	AUG	
COSMOS 1029 VENERA 11 COSMOS 1031 VENERA 12 COSMOS 1032 COSMOS 1033	25.50 25.50		Cub	
VENERA 11 COSMOS 1031 VENERA 12 COSMOS 1032 COSMOS 1033	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8		ņ	
VENERA 11 COSMOS 1031 VENERA 12 COSMOS 1032 COSMOS 1033 COSMOS 1033	SSSU SSSU SSSU SSSU SSSU SSSU SSSU SSS		SEP	
VENERA 11 COSMOS 1031 VENERA 12 COSMOS 1032 COSMOS 1033 COSMOS 1033	USSR SSS SSS SSS SSS SSS SSS SSS SSS SSS	29 AUG		
VENERA 11 COSMOS 1031 VENERA 12 COSMOS 1032 COSMOS 1033 COSMOS 1033	USSR	29 AUG	SEP	
VENERA 11 COSMOS 1031 VENERA 12 COSMOS 1032 11 COSMOS 1033 11 11 11 11 11 11 11 11 11	8890 3000		001	
VENERA 11 COSMOS 1031 VENERA 12 COSMOS 1032 11 COSMOS 1033 11 11 11 11 11 11 11 11 11		6 SEP		
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VENERA 11 COSMOS 1031 VENERA 12 COSMOS 1032 11 COSMOS 1033 11 11 11 11 11 11 11 11 11	USSR		SEP	
COSMOS 1031 111 111 111 111 111 111 111 111 11	USSR			
VENERA 12 COSMOS 1032 11 COSMOS 1033 11 COSMOS 1033	USSR	9 SEP	SEP	
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VENERA 12 COSMOS 1032 11 COSMOS 1033 11 11 11 11 11 11 11 11 11 11 11 11 1	ussa Ossa		¥ DE	
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COSMOS 1032 111	USSR		DEC	
COSMOS 1033	A\$ 50	19 SEP		
11 11 11 11 11 11	OSSA		SEP	
COSMOS 1033 111	USSR		ğ	
COSMOS 1033 11	us sa		001	
11	USSR		OC1	
11	USSR			
	USSR	3 OCT	00	
090A PROGRESS 4 11040	USSR		00	
11	USSR		00	
092A COSMUS 1042 11052	ussa		001	
C92B 11053	USSR	6 OCT	10 OCT 78	
0,050	USSR	6 OCT	00.1	
11071	USSR			
11058	US SR	13 OCT	28 OCT 78	
011	asso	13 OCT	_	

DECAYED OBJECTS

		DECAYED (OBJECTS			
INTER-						
NATIONAL DESIGNATION	NAME	CATALOG 1E NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1978 LAUNCHE	LAUNCHES (CONT.)					
6		400	assn	13 001	31 OCT 78	
1070 070		3 6	SD			
0 1		19786	s S		FEB	
	4401 SOMPO	11065	SSD		100	
	•	11066	USSA	17 OCT		
		11067	SSO		00	
		11068	RSSD			
1978 097E		11069	USSR		OCT	
1978 6980		18605	Sn		0 OC1	
1978 699A	INTERCOSMOS 18	-	USSR		Y	
1978 6996		11083	USSR		X	
		01111	CZECH		ָ ה ה	
	PROGNOZ 7	-	asso		3	
		11090	as sn	30 OCT	> :	
		11089	USSR		BL ADN LI	
	COSMOS 1046	11098	NSSU 1		> :	
		11099	USSR	AON I		
		11103	#850 #850	AON .		
		11104	HS SO	AON I) (
		11105	2550			
		11106	#SSD	A 70%	07 AON +1	
		11107	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
	HEAD 2	10111	? :	AON AT	SO HAM US	
	•	20111	50		X >	
	C05M05 1047	80111	8660			
		90111	30.00 0.00	o 4	֓֞֝֞֜֜֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֓֓֡֓֓֓֓֡֓	
		11120	4550 3550	n (
		91111	n :		3 2	
		71111	200		, L	
	COSMOS 1049	81111	X000		2 2	
		61111	Kn00	AON 12	, U	
		62111	2000		י נ ע	
1978 1970		11120	3550	NON 12) H	
1975 1075	0501 204207	11121	8550			
		11122	8550		DEC	
2 6		11123	SSO		Z	
978		11124	USSR		247	
		11143	SSO		DEC	
1973 116A	COSMOS 1059	11137	USSR		DEC	
		11138	USSR			
27.5		111157	USSR		DEC	
		11160	USSR		OE C	
	C05M05 1060	11139	USSR		DEC	
1978 111H		11140	USSR	B DEC	3 060	
		11146	Sn	14 DEC	DEC	
	C03M05 1061	11148	USSR	14 DEC	7 DEC	
		67111	USSR		DEC	
			USSR		NAD	
	C03M05 1062	11150	USSR	15 DEC	20 APR 81	

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		DECAYED	YED OBJECTS				
NAT I ONAL		CAT	AL06				
CESTGNATION	NAME		NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1978 LAUNCHE	LAUNCHES (CONT.)						
ř		•	ų.	69.917	, u	2	
3617 9/61				9550	ָ ה ר	2 0	
		-	100	¥6.50	ָר ה ה	204	
			11159	USSR	19 0EC	21 DEC 78	
	COSMOS 1064		161	USSB	DEC) Q	
	•		162	USSR	0	NO N	
	COSMUS 1065		163	USSR	DEC	V OV	
		11	164	USSR	DEC	AUG	
		11	11243	USSR	0EC	MAR	
1978 1200		11	11244	USSA	DEC	MA A	
1978 120E		1.1	243	USSP	DEC	MAR	
		11	549	USSR	DEC	MAR	
		11	754	USSR	DEC	J.	
978 1			426	USSR		AUG	
-	COSMOS 1068	11	169	USSA			
978		11	171	USSA		DEC	
_		11	172	USSA		ZYS	
978		11	226	asso			
-		11	227	SSN		NAL	
978	COSMOS 1069		11173	USSA		Z	
		11	174	USSK			
' -		11	175	SSS		DEC	
		11	176	USSR	28 DEC	ZYS	
		11	228	USSR		247	
-		11	11237	USSR	28 DEC		
1979 LAUNCHES	v s						
1979 001A	COSMOS 1070	11	229	USSR		NAN	
1979 0018		11	230	USSR			
1979 001C		11	1231	USSR		NYC	
1979 0010		11	11232	USSR		19 JAN 79	
3100 6261		11	234	USSR	11 JAN	ZYS	
1979 001F		11	245	USSR		ZYS	
		11	.246	ussa	ZYS	245	
		11	247	USSR	NYO	ZYS	
	COSMOS 1071	11	(233	USSR			
		11	.235	USSR	247	Z	
		ped ped	.236	USSR	247	Z	
			250	USSR		Z I	
			253	USSK	NAU EI	Z :	
			*52°	OSSA		2 3	
			241	USSR		Z Y Y	
		11	242	USSR		Z Y	
		97	1529	USSR		P OC	
	COSMUS 1073	11	.255	USSR		FEB	
		11	1257	USSR		FEB	
		11	1264	USSR	30 JAN	14 FEB 79	
		11	. 265	USSR		FEB	
1979 0073		11	258	NS		FEB	

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		DECAYED DBJECTS				
INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1979 LAUNCHES	ES (CONT.)					
4000	700 BONDON	096.11	0000	:	000	
	•	11260	855U	NAU 16	2 FEB 79	
		11315	USSR			
		11316	SSN.	 ,	9 JUN 79	
1979 0085		11317	US 5R	 .	904	
		11319	USSB	NAL LE	27 NH 25	
	COSMOS 1075	11262	USSA	. 80	100	
		11263	USSR		AUG	
	SAGE	11270	SN		APR	
		(SD:	18 FEB	19 SEP 81	
		∾ •	Sn		YOU.	
4410 0101	CURSA B	-	NA TAN		¥ 10	
1979 014B		11274	2001	21 558		
		• ~	USSB			
	COSMOS 1078	11276	2550			
		_	USSR	22 FEB	FEB	
1979 616C		11287	USSA		MAR	
		-	SD		100	
		11291	Sn.	24 FEB		
			s n		FEB	
		O.	\$ T		APR	
		16041	\$0:	24 FEB		
7/10 6/61		1,001	\$ 00 0 0			
1979 CI/AH		20101	n v	20 70 70	֓֞֞֞֞֓֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֓֓֓֓֓֓֞֡֓֓֡֓֡֓֡֓֡֓֡֓֡֓֡֓֡֡֡֡֓֡֓֡֡֡֡֓֡֓֡֡֡֡֡֡	
		16464) ()		Z Y	
		16483	s n			
		16556	SN		FEB	
		v	SN		FEB	
		17831	S n		001	
	SOYUZ 32	11291	USSR 	25 FEB	N N	
1979 6188		11282	USSR			
	2	11286	8550 8550		K Q	
		11323	8850			
	PROGRESS 5		USSR		APA	
1979 0228		11293	USSR		MAR	
	COSMOS 1080	11294	USSR	14 MAR	MAR	
		11.295	asso.		MAR	
		11	USSR			
		~	USSR		MAR 7	
		11 312	USSR			
		-	Sn		SEP	
		-	ns	16 MAR	B MAR	
	COSMOS 1090	3.	USSR		APR 7	
		31	USSR		APR 7	
	SOVUZ 33		USSA	10 APR	12 APR 79	
1979 0299		11325	USSR		¥	

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COSMUS 1094	11329 11330 11330 11330 11333 11334 1134 11335 11336 11351 11352 11354 11354 11344 11344 11344 11344 11344	11.2 APR 11.8 APR 11.8 APR 11.8 APR 20 APR 20 APR 25 APR 25 APR 25 APR	· · · · · · · · · · · · · · · · · · ·
CUSMOS 1096 COSMOS 1097 PROGRESS 6 COSMUS 1098	11552 11346 11346 11348 11358 11358 11358 11359 11359 11359 11359 11359		N A P A P P P P P P P P P P P P P P P P
COSMOS 1099 COSMOS 1100 COSMOS 1101		17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	454452544 \$6\$\$\$\$666\$\$
COSMOS 1102			29 MAY 79 6 JUN 79 13 JUN 79 26 AUG 79 14 JUN 79 26 JUN 79 27 JUN 79 27 JUN 79 27 JUL 79 28 JUN 79 29 JUL 79 20 JUL 79

DECAY		2	5 AUG 9	AUG	62 NOF 6	25	FEB	FEB 8	FEB	21 JUN 79	2 2	3	11 JUN 79	Š		JOY :	20 204 05 20 114 05	5 =	, 3	귉	됩	Š]	ğ :	26 HI 70	3 5	3	NS,	ا ا		36 ALC 79	2 5	AUG	7 JUL 79	Į,	APR	Z	ZY	֝֟֓֟֓֟֝֟֝֟֝֟֓֟֝֟֓֟֝֟֓֓֟֟֓֓֓֟֟֓֓֓֓֟֓֓֓֟֓	¥0¢	SEP 7	00	001	> 0 2	- 1	8/ AON 11	
LAUNCH		4	NOT 00		NOC 9	9 JUN				N 2			NOC 01		N .	N (NOC 21		່ທ						NOT 22						NOC 62	. 0	•	5 JUL		•										7 =	,
SOURCE			\$550 8550	USSR	USSR	OS	SN	INDIA	USSR	USSA	85 5 F	USSR	SD	NSSA	USSR	USSR	XS S D	45.50 03.51	asso	USSR	USSR	USSR	as so	USSR	2 8 8 E	2550 2551	USSR	SSO	NS SR	SSSO:	2550	355D	USSR	USSR	USSR	USSR	USSR	USSA	asso	nssa	USSR	USSR	USSR	USSR	USSK COCC	3550	とうつつ
DECAYED OBJECTS CAFALOG NJMBER		- 1	1.000	11387	11389	11411	11412	11392	11393	11394	0 0 0 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0	11409	11398	11399	11400	10911	11415	70777	11420	-	11413	11414	11437	11438	11430	11410	11421	11422	-	┛,	11453	11454	11456	11441	11442	14070	11443	11444	\$	11445	11514	11535	11557	11583	S C	11594	ח
NAM.	S (CONT.)			SOYUZ 34				BHASKARA		COSMOS 1105				COSMOS 1106				COLL COECON			COSMOS 1108						PROGRESS 7		COSMOS 1111								COSMOS 1112										
INTER- NATIONAL DESIGNATION	1979 LAUNCHE		1979 0480		1979 0498			-			1979 0550						1979 0540	ACCO V/VI							1979 056E				1979 061A			1979 0010			1979 052C											1979 063K	

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		DECAYED OBJECTS				
		CATALOS				
DESTGNATION	Z A Z	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1979 LAUNCHES (CONT.)						
1979 063M		11596	USSR	6 JUL	Ž	
•		S.	USSR			
		11598	USSR			
1979 6634		11599	USSR		OE C	
1979 063R		11603	as sn	6 JUL	NO	
0635		11617	บรรล			
		11618	USSA	ه کلا	2	
		11619	USSR		U L	
		11623	USSR		> 2	
1979 063W		11625	USSA	6 JUL	0 0	
		11626	USSR		9	
		11627	USSR			
		11628	USSK		ב ב	
		11543	USSR		DEC	
06348		11644	ussa		ب ق	
	E T	7	nssn		J T	
		11448	USSR		i i	
		11459	USSR		₹	
1979 0540		11460	USSR		₹	
		11461	USSR	`	i i	
	14	11449	USSR	11 JUL	9	
0.658		11450	S S S S		FEB	
979 066A COSMOS 1	115	11451	USSK		j	
		11452	USSR		₹ ;	
979 066C	1	11462	NSSE.		9 1	
	17	11463	USSK		9	
910		11404	CSSK			
979			US SK		9 :	
		79411	35.65	7 C 2C	W 204 01	
979 008E	9	70 1 1 1	7000		9 4	
	0111	11403	8550	27 MH	2 =	
		11400	255D		AUG	
		11475	US SB		VO V	
		11476	USSR	31 JUL	AUG	
	10	11478	USSR		AUG	
6713		11479	USSA	3 AUG	7 AUG 79	
1979 0728		11490	SD	NO AUG	AUG	
073A COSMOS 11	120	11485	USSR	11 AUG	AUG	
1979 C738		11486	USSK	11 AUG	904	
1979 3730		11505	USSR		AUG	
1979 6730		11506	USSR	II AUG		
1979 074A COSMOS 112	.21	11497	USSR		SEP	
		11488	USSR		AUG	
1979 675A COSMOS 112	122	11491	USSR		P 00	
1979 0758		11492	USSR		AUG	
		11498	USSR	17 AUG	7 AUG	
		_	USSR		YOU	
075£		20	USSR	17 AUG	< 	
1979 076A COSMOS 1123	123	11496	USSR	21 AUG	3 SEP 79	

		DECAYED OBJECTS				
INTER- National		CATALGG				
DESIGNATION	NAME	NUMBER	SDURCE	LAUNCH	DECAY	NOTES
1979 LAUNCHES	S (CONT.)					
1979 0768		11497	USSA			
616		11517	USSR	-	6 SEP 79	
			USSR		SEP	
616		11519	USSR.	_	SEP	
040		11512	USSR			
1979 0770	ACTT SOMEON	11513	2550 2550	31 406	14 SEP 79	
040		11510	USSR		SEP	
646		11524	USSR		OCT	
626		_	USSR			
		-	USSR		FEB	
		152	25 SD		SEP	
616		152	SSSU (CO.		ב פ	
616	COSMOS 1127	11520	USSR		18 SEP 79	
616		17611	26.60	200		
7080 6761		11531	5550	י א ריים	ייי קריי	
	BOLL SOMSON	11520	(S)			
	•	01151	USSR	14 SEP	SEP	
		11547	USSA		SEP	
979	HEAD 3	11532	SN	20 SEP	OEC	
		11533	sn	20 SEP	> 0	
	COSMOS 1129	11536	USSR		<u> </u>	
		11537	USSR		5	
		11579	USSR	25 SEP	500	
		11580	USSA		8 OCT	
		11582	US SR		X I	
	COSMOS 1138	11548	USSR			
		0.50 T.I.	2000	700 000	00.000	
1979 5555		0/0/1	36 SO			
1979 0850		11577	355D	28 SEP))	
		11578	USSA			
		11559	ns		OCT	
		11562	USSR		5 OCT	
1979 U88A	CUSMUS 1139	11564	บรรล		8 OCT	
1979 0888		11565	USSR	5 OCT		
1979 588C		_	USSR	60	001	
1979 3900		11588	US SR		7 SEP	
1979 0918		11590	USSR		NOV .	
1979 6916		11591	USSR		>	
	COSMOS 1142	11592	USSR		> 2	
		11593	USSR		8 OCT	
1979 092C		11613	USSR		M A	
1979 0920		11014	USSR			
1979 092E		11615	USSR		NO.	
1979 092F		9	USSR	22 OCT	9 MAR 9	
	MAGSAT	100	SO:		8 200 E	
_		9	SO:		z	
1979 6940		11607	S	30 00		

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			DECAYED DESERTS				
INTER-	Ā		CATALDG				
DESIGNATION	NOITE	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1979 L	AUNCHES	LAUNCHES (CONT.)					
3 6261	₩960	INTERCOSMOS 20	11609	USSR	1 NOV		
	6960		11610	USSR		MAR	
1579 €	C97A	COSMUS 1144	11611	USSR			
1970	0978		11612	USSA	2 NOV	> 2	
1979 0	0860		11624	Sn		> 2	
1 0701	100A	COSMOS 1146	11632	USSR	5 DEC		
19791	1008		11633	USSR		Z	
1 979 1	1018		11636	Sn			
1979 1	101C		11637	ns		MAR	
	102A	COSMOS 1147	11638	USSA		DEC	
1 0701	: C28		11639	USSR		DEC	
19791	102C		11046	USSR			
	1020		11647	US SA		MAR.	
1979 1	103A	S0YUZ T-1	11640	USSR		MAR	
1 979 1	1038		11641	USSR		DEC	
	1030		11642	USSR		DEC	
	1044	ARIANE VI	11645	ESA		> 2	
979	1043		11659	ESA		14 NOV 82	
	1058		11651	USSR		DEC	
070	105C		11660	USSA		APR	
	1050		11661	USSR		DEC	
	1064	COSMOS 1148	11649	USSA		Z	
1979 1	1069		11650	USSR		DEC	
	1000		11654	USSR			
	0901		11655	USSR	28 DEC	247	
	106E		11657	USSR	28 DEC	8 NAC	
	106F		٥	USSR		11 JAN 80	
19861	L AUNCHE S	vs					
				9		:	
	001A	COSMOS 1149	11652	SSO		2 3	
	0016		11653	3850			
	0010		11556	350		2 2	
	0010		11073	3880			
980	001E		\$201T	2000	Z 2		
080	0015		6/017	2000			
2 6	2000		11663	45.50 45.51		Z	
	0.000		400	255n			
	0000		11.665	USSR	II JAN	ZY	
	7700		11.666	USSR		Z	
	1 400		11719	Sn			
	4900	COSMOS 1152	11678	USSR	4	FEB	
	0000		~	USSR		Z	
	4000	COSMOS 1155	_	USSR	7 FEB	21 FEB 80	
	2000		11686	SSSO		FEB	
	2000		11711	USSR		MAR	
	2000		11712	assn		2 MAR	
	00 0E		11717	USSR	7 FEB	10 APR 80	
	010		11687	Sn		OCT	

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NAME	CATALOG NJMBER	SOURCE	LAUNCH	DECAY	NOTES
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	11688	S S	7 FEB	13 MAR 80	
		SD	7 FEB		
	11725	USSR		MAR	
COSMOS 1164	11700	USSP		S JAN	
	11701	855D		MAN	
	11702	USSR		¥	
	11949	USSR		> 0 2	
	11703	SO		2 DEC	
	11704	SO		¥	
	20325	Sn		ò Q	
7 [11 706	JAPAN		MAY	
	11707	JAPAN		247	
	11.310	JAPAN		27 AUG 80	
	77011	NAGAL		00.1	
	00211	USSR		FEB	
	11710	92511		FFB	
		0551		W	
	10011	1000		400	
	20011	בר הלים הלים הלים הלים הלים	27. 62.0		
COSMUS 1165	11/13	2000			
	** / TT	K 0 0 0		. 1	
	11727	6251			
	11.216	NAGAL		FEB	
	01/11	Z		2	
7700000	11722	USSR		Z Y	
•	11723	8550		A A	
	11724	8550		MAR	
	11717	0550		SED	
	10/11	r 000		004	
	00111	4550 6351		V DD	
	0011	0331		1	
COSMUS 1107	42/11 42/11	0551	4	0 4	
	11.00	esse:		9nv 9	
	12606	0551		Ü	
	00021	1000	O V V	A 116	
	0040	3371 33311		A 116	
	0076	reso.		15 DC1 81	
	60021	\$ 00 c		, 2	
	71021	X000			
	11971	2000			
	12512	2550 250		9 (
	12613	USSR		9	
	12615	USSR		Š	
	12616	USSA		¥C6	
COSMOS 1169	11741	USSR			
	11.742	HSSN	27 MAR	> ON	
PROGRESS 8	11743	USSR		6 APR 8	
	11744	USSR		29 MAR 80	
COSMOS 1170	11747	USSR	1 APR	12 APR 80	
	11748	USSB	1 408	S ADD AO	

INTER-		DECAYED	ED OBJECTS				
NATI ONAL		CATALO	LOG				
DESTONATION	NAME		96A	SOURCE	LAUNCH	DECAY	NOTES
1980 LAUMC	LAUMCHES (CONT.)						
1980 6250		117	ຽ	USSR		APR	
980 02		11756	56	USSR		APR	
0		11757	57	USSR	APR		
1980 627A	S0YU2 35	117	53	USSR		Z S S	
1980 0278		117	'n	88	APR	APR	
		1175	59	USSR	12 APR	•	
		117	9	USSR	A 0	AW 6	
		7 11		2000	X 4 4	¥ 6	
	COSMOS 1173	711	93	assn	APR - 1	¥ 4	
080		117	1764	nι	X 40 4	¥ 6	
086		[1]	1786	2550	* * * * * * * * * * * * * * * * * * *	1 0	
1980 030		7 1 7	1266	n u	K 04		
		77	11.700	n u	K 04	۲ <u>۱</u>	
		777	1111	2000	K 0	20 C	
000 000 T			7 ·	25.50	× 00	2	
			7.	2000	. Q	40	
2 0			11776	8550	8 AP 8	FEB	
		117	0.00	USSA	APR	FEB	
		120	86	USSR	8 APR	DEC	
980		121	441	USSR	APR	SEP	
		123	146	USSR	APR	APR	
1980 030X		123	12.349	USSR			
		123	355	USSR	8 APR	OE C	
		123	156	USSR		21 MAR 82	
		123	158	USSR	8 APR	100	
		123	159	USSR	APR	A UG	
		123	161	USSR	8 APR	٦ ا	
	,,=	123	162	USSR		Y DY	
		561	5.5	ussa	80		
	COSMOS 1175	117	767	USSR	.	¥	
		117	70	USSA	60	¥	
			20	USSR	30 (, P.	
	·			2550	0 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	30 MAY 00	
	אטפאבטט א		#0/11	2000	¥ 6		
9550 0801			0001	1550	X 04	֡֝֝֝֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֓֓֓֓֓֓֡֓֓֡	
			000	USSB	W P P		
	COSMOS 1177		1783	asso	9 APR	S	
		7.11	790	USSR	9 APR	MAY	
		-	840	USSR	APR	257	
1980 C36A	C05M05 1178	111	11793	USSR	ĭ		
		. 11	734	USSR	ĭ	MAY	
		11	1795	USSR	7 MAY	MAY	
1980 0360		116	305	USSR	¥	支	
1980 036E		116	305	USSR	¥	NO	
1980 C36F		11 8	807	US SR	Ĭ	S NOC	
	COSMOS 1179		796	USSR	4	킼	
1980 037B		11	797	USSR	14 MAY	11 JAN 83	
1980 038A	CUSMOS 1180	11	11798	USSR	N MA	6 MAY 8	

			DECAYED UBJECTS				
INTER- Vational	Ā		CATALOG				
DESIGNATION	ATION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
7 0861	LAUNCHES	(CONT.)					
080	0 4 40 0 0 4 40 0		11799	assn	15 MAY	23 MAY 80	
	339C		∞	USSR	_	MAY	
	0380		11813	USSR		¥	
	U38E		11914	USSR			
	0.38F		11815	USSR	ις.	MAY	
		COSMOS 1182	11308	NSSA.	m (NOT :	
	9040		္မ	USSR	n (A Y	
	0400		82	SSSO	NOC 201	08 NOT 01	
			11824	3555 5055 5055 5055 5055 5055 5055 5055		5 =	
		30102 38	1 1011	reso.) \ }	
	0410	FRIT SONSO	11815	8880		2	
		•	11817	2880		S JUN	
	0.40		11.91.8	NS SN			
	0420		11833	asso	28 MAY	J.	
	342E		11834	USSR		AUG	
	042F		11835	2550		Z O O	
	0426		11836	USSR		DEC	
		NOAA B	11819	SO		MAY	
	0438		11823	os S		SEP	
			11874	SD:		9 N	
		S0YUZ T-2	11825	8550 1000			
			11826	USSR	NO. 1	08 NO.	
0 0861	046A	COSMUS 1185	11827	2000	200	3 =	
	9990		11923	A220		<u> </u>	
980	2040		11854	USSR		S	
		COSMOS 1186	11829	USSR	NUC 9	1 JAN 82	
			11830	USSR		DEC	\$58
	C47C		11831	USSR		25	
1980 0	0440		11912	USSR	•	4 SEP	
	047E		11913	USSR		SEP	
	047F		12407	asso			
	0476		12408	USSK	200	10 AVE 0	
	H 40		21421	2000			
			01421	200	-	X	
	¥ 6		12415	SSE SE		¥	
	7740		2410	USSB		00	
	C 4 7 N		12422	SSO		MAY	
	C 47P		12453	USSA	NOC O	28 MAY 81	
	0410		12459	USSR	NUC 9	20 MAY 81	
	F-47H		12480	USSR			
	3475		12481	USSR			
	1240		12482	USSR		Z S	
	0470		12483	USSR		Z S	
980	0477		12434	USSR		2 2	
260	C 474		er o	880 800		NO. 0	
096	C47X		12485	NSSN	NOT .	29 SEP 81	
1980	474		12487	3000	2 0	200	

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1980 L	LAUNCHES	ES (CONT.)					
1980	2440		12490	USSR		N S S	
	C47AA		12509	USSR	805 S	אר ה	
	047AU		12510	US SR	200	20 JUN 81	
	047AC	F 0 0 7 0 0 0 0	11071	9550	•	2	
0 0 0 0	4 6 4 0	COMPONE TION	11833	USSR	12 JUN	3	
	C48C		11934	USSR	, ě	Š	
	0480		11865	USSR	•	Š	
	C 48E		11866	USSR	Ň.	٦ إ	
	8640		11842	USSR		3	
	7640		11.843	USSR	•	14 JUN 80	
	0430		11.855	USSR		¥ 4	
	0 4 9 F		3000	8551			
	720		0 7 4 5 T	8550		1	
	4000		11850	Sn		MAR	
	5523		11851	s n		20 JUN 80	
200	1 E C C		11857	ASSU			
	053C		11858	USSR	21 JUN	J J	
	154A	COSMOS 1189	11863	USSR		귉	
	6548		11364	USSR			
1980.0	0.54C		11886	USSR		₹ :	
	0.540		11887	USSR	٥	₽	
	054E		11889	USSR	۰	₹ 1	
	055A	PROGRESS 10	11867	USSR	o.	ַלְ נִ	
1980	C 558		11869	USSR			
1980	9250		11872	USSA	2 7 7	9 0 4	
	057C		11873	USSR		j :	
	059A	COSMOS 1200	11.884	USSR		ğ :	
	9650		11865	NSSN 1	1 1	00 70° CI	
	059C		10611	SSA		֓֞֝֟֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֓֓֓֓֓֓֡֓֓֡֓֡֓	
	0650		11902	X 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	, JOL		
	059E		7041	2000		=	
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	0000		11892	USSR		ž	
	0090		11914	USSR	14 JUL	20 APR 82	
	0.6GE		11923	USSR		APR	
	C61A	C0SM0S 1201	11894	USSR	15 JUL	Ę	
1980	0618		11895	USSR	Ġ	₹	
1980	2190		11910	USSR	er)	3	
1980	0610		11911	USSR	er)	V OC	
1980	062A	ROHINI 1	11899	INDIA	•	¥	
1980	0628		11900	INDIA	60		
1980	C63B		11897	USSR	•	V	
1980	C63C		11808	USSR	60	VO C	
1980	C 64 A	SOYUZ 37	11905	USSR	m i	00	
	0.648		11906	USSR	n.	3 3	
	065A	C05M05 1202	11907	USSR	-	9 04	
1980	9690		11908	USSR	24 JUL	29 JUL 80	

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1987 LA	LAUNCHES (CONT.)						
1980 06	0650		11920	USSR	-	AUG	
1980 05	0.550		11921	USSR	24 JUL	-	
			11922	USSR	•	P 00	
	066A COSMOS 1203	33	11915	SSD	•	14 AUG 80	
	0668		11916	200	31 JOL	9 0	
1980 06	000C		11017	US 58		0 O	
	1 V		11028		•	AUG	
	1000		11929	USSR	•		
	067A COSMOS 1204	*0	11917	USSR	٠	FEB	
	0676		11918	USSR		13 FEB 81	9 ∩≎
1980 06	C67C		11960	USSR	٠	OCT	
	C67D		119611	USSR	•	001	
	067E		11987	USSR	•	001	
	0 67 F		11984	assn	•	24 OCT 80	
	0676		11989	USSR		100	
	067н		11992	USSR	31 JUL	001	
	0673		12010	USSK			
	067K		12011	USSR			
	067		12014	US SR		A C	
	067M		1201B	0 S S S S S S S S S S S S S S S S S S S	31 30	20 202 07	
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	×293		12053	USSR			
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	067X		12057	USSR	31 JUL		
	0677		12074	USSR		DEC	
	7290		12375	USSR		OE C	
	068A COSMUS 1205	05	11924	USSR	12 AUG		
	0688		11925	USSR		VOC.	
	068C		11943	USSR		SE P	
			-	USSR		J (
	070A COSMOS 1207	0.7	~	USSA		S. T	
	0708		11939	US SR		V OC	
	0700		-	USSR	22 AUG	SEP	
			-	USSB OSSB		SEP	
	COSMOS	1208	•	USSR	26 AUG	ָּהָ הַ	
1980 07	0716		-	USSR		YOU.	
1980 01	072A COSMUS 120	00	~	USSR		17 SEP 80	
1980 07	0725		11951	USSR		SEP	
	572C		11976	US SR	3 SEP		
	0748		11965	NS		DEC	
	075A SOYUZ 38		6	ussa		SEP 8	
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	C75C		11979	USSR		SEP 8	

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1980 LAU	LAUNCHES (CONT.)					
1950 976A	SA COSMUS 1210	11980	USSR	19 SEP	0C1	
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1980 0760	ي	-	USSR		961	
1980 0760	Q	-	USSA	19 SEP	90	
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	7A COSMUS 1211	-	3000		֓֞֝֜֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֓֓֓֓֓֡֓֓֡֓֡֓֡	
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1980 CB1E	ш.	12013	USSR		200	
1980 082A	ZA CUSMOS 1214	12008	USSR	10 OCT	120	
	28	12009	USSR		3 OCT	
	20	12029	USSR		001	
	20	12030	USSR			
		12031	USSR	10 OCT	00	
	3A COSMOS 1215	12016	USSR			
	39	12017	USSR		ن ا ون	
	36	12018	OSSK		2 (
		12026	USSA		A CA	
980	4A COSMOS 1216	12019	88 SO		30 001 80	
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N A A M	S (CONT.)										C05M05 1221							1 -1 ZHAUS	•				COSMOS 1224				COSMOS 1227											COSMOS 1236				Ų.	3	COSMOS 1237		
INTER- NATIONAL DESIGNATION	1980 LAUNCHES	1980 088E	o				1990 089X								1980 090£		1950 0921					1980 0950				1980 0960		1980 1018		1980 1010		1980 1036	1980 1030				1980 104F		-	1980 1050	1980 1050	HONITA I THE I	;	1981 051A		2100 1001

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INTER-	R- ONAL			CATALOG				
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1981		LAUNCHES (CONT.)						
1091	0010			12145	USSR	NAU 0	5 JUN 81	
1981	001E			12146	USSR		NAS	
1981	001F			12147	USSR		MAR	
1961	9100			12148	USSA		FEB	
1981				12135	USSR	NAL Q	Ø	
1981	0000			12136	USSK		Z Y	
1961		COSMOS 1239		12140	USSR		N V	
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1861	00 5A	CUSMUS 1240		12143	OSSX Supplemental	ZO JAN	1	
100	9000	61 95305000		12144	US SE		18 NAU 02.	
100.1		- n		12151	2001	N41 46	¥ 2	
1991				12157	us se	30 JAN	FEB	
1981				12158	USSB		E E	
1981		COSMOS 1243		12163	essn	2 FFB	1 11	
1981				12161	asso	2 FEB		
1981		INTERCOSMOS 2		12162	USSR		3	
1981				12163	USSA		2	
1981	C128			12296	LAPAN	11 FEB	28 FEB 81	
1991		COSMOS 1245		12299	USSR			
1981				12300	USSR		FEB	
1861				12312	USSR		A D R	
1981				12313	880		Y Y	
1981				12314	USSR			
100	44.0	AACT SOMOOD		12310	2000		22 JUL 01	
1 0 0				12301	מאטו		E 14	
1001				12306	9551			
1981				12305	USSB		FEB	
1961				12306	NS SN		APR	
1981				12310	LAPAN		>ON	
1961	019A			12315	OS		20 JUN 81	
1961		COSMOS 1248		12317	USSR			
1981				12318	USSR	S MAR	MAR	
1961				12550	USSR			
1981				12552	USSR	S KAR	₹ :	
1691	0234	8-1 70A0S		12334	asso ossi	IZ MAR	26 MAY 81	
7061		•		CCCST	2000	X 4 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	¥ 5	
1061		COMES 1530		15001	15.50	14 H		
1861				12340	SO	_	I Y	
1981		COSMOS 1259		12341	USSR	17 MAR	MAR	
1961	0264			12342	USSR		25 MAR 81	
1961	C26C			12350	USSR	17 MAR	_	
1961				12379	USSR		29 APR 81	
1981				12380	USSR		Ŋ	
1981				12381	USSR		O AUG	
1981				12382	USSR		APR	
1981	0 6			12352	USSR	16 MAR	18 MAR 81	
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12397 12364 12366 13180 13181
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1991	LAUNCHE	LAUNCHES (CONT.)						
1961	636A	C05M05 1265		12402	USSA	16 APR	28 APR 81	
1961	C 365			12403	USSR	16 APR	APR	
1961	C36C			12425	USSR	16 APR	15 MAY 81	
1981	0360			12426	USSR		MAY	
1981	0.36F			12428	บรรห		M A	
1981	0378			12423	USSR		¥	
1981	937C			12434	28SD		¥	
1981	0.394	C05M05 1267		124.19	USSR		3 ;	
1981	0393			12420	esso			
1981	390			12421	USSR	25 APR	A P	
1981	0350			12475	USSA		> : X	
1981	040 A	COSMOS 1268		12423	ussa ussa		¥ ?	
1861				h2h21	USSK		¥ :	
1961				12443	USSE CONTRACTOR		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
186	2040			12449	0.550 0.000	7 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	18 MAY 81	
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1081				12451	45.50 45.51		\ \ !	
1981		SOYUZ 40		12454				
1981				12455	USSR		¥	
1961				12460	ns.		APR	
1981				12944	SD		DEC	
1961		COSMOS 1270		12461	USSR		2	
1961				12462	USSR		MAY	
1981		,		12463	USSR		¥	
1981		COSMOS 1272		12465	USSP.		Z S	
1981				12467	USSR		¥	
1981				12468	SSS	21 MAY	× X	
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1981				12500	USSA		2	
1961				12501	USSR		S.	
1981	C48E			12502	USSR		200	
1981				12503	USSR		6 JUN 81	
1981	9640			12473	r s		8 SEP 81	
1981				12494	NS		APR	
1981		ROHINI 2		12491	INDIA		N D D	
1861	051B			12492	INDIA	31 MAY	6 JUN 81	
1961		CUSMOS 1274		12495	USSR	NOC E		
1961				12496	USSR		N O O	
1981				12579	USSR		귉	
1981				12732	USSR		AUG 8	
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1981	0548			12513	USSR	NOT 0	27 JUN 81	

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1981 LAUNCHES (CONT.)

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1584 1958	0.000 COSAMOS 13.843 USSR 4 SEP 0 CCT 81 0.000 1.2841 USSR 4 SEP 0 CCT 81 0.000 1.2841 USSR 4 SEP 0 CCT 81 0.000 1.2842 USSR 11 SEP 1 JAN 82 0.000 1.2842 USSR 11 SEP 1 LAN 82 0.000 1.2842 USSR 14 SEP 1 LAN 82 0.000 1.2842 USSR			12806	USSR		SEP	
1284 1284	0.000 COSMOS 1.28.41 USSR 4. SEP 2.5 FP 2.5 FP <td>981 086E</td> <td></td> <td>12839</td> <td>USSR</td> <td></td> <td>00.1</td> <td></td>	981 086E		12839	USSR		00.1	
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DESIG	DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1981	LAUNCHES (CONT.	•					
1991	C97H		13695	USSR		DEC	
1991	6973		13723	USSR	28 SEP	DEC	
1961	097K		13724	USSR		DEC	
1991	J 60		13729	USSR		DEC	
1991	M260		13731	บรรส	28 SEP		
1961	N2 60		13732	USSR		DEC	
1961	d260		13733	8880		U W	
1991	0260		13734	USSR			
1981	6 97 8		13735	USSR		DEC	
1981	0975		13743	USSR			
1981	1760		13744	USSR	28 SEP	DEC	
1981	0970		13820	as so		FEB 8	
1981	0970		13821	rssa N		FEB 8	
1981	M260		13622	8880		FEB 8	
1981	X260		13823	SSS O	28 SEP	FEB 38	
1981	7.60		13824	8880	28 SEP	FEB 8	
1861	7169		13828	26.60			
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1981	100B U0SAT		12888	ž	6 OCT	100	
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1981	100E		13405	SD			
1981	101A C0SM0S	1314	12895	USSR		OCT	
1981	1018		12896	USSR	9 OCT	OCT	
1981	1010		12900	USSA		> 0 2	
1981	1010		12921	USSR		ğ.	
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1981	1015		12923	USSR		001	
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1981	1040		12925	2550	15 OCT	00.1	
1961	104E		12926	asso		1 OCT	
1981	1058		12916	USSR			
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1981	1058		12929	USSR		0CT 8	
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1981 LAUNCHES	ES (CONT.)					
		12934	USSR		> 0	
981 108C	SOME TAILS	12935	4880 8880	31 001	14 NOV 81	
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		12971	2550	AON FI	15 APR 82	
981 1126 981 112H		12011	20 FD		2 L	
		12074	SSD		DFC	
		12960	USSR			
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981 1148		13098	Sn			
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	COSMOS 1329	12989	USSR	4 DEC	DEC	
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		13005	ะรรก		DEC	
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	COSMOS 1330	13008	USSR		ZYS	
		13009	USSR	19 DEC	DEC	
1 122C		13025	ESA		> 0	
1981 1236		13013	USSR		•	
81 123C		13014	USSR		10 JAN 82	
1982 LAUNCHES	ES.					
982 002A	COSMOS 1332	13031	USSR	12 JAN		
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982 004B		13088	Sn		2	
	COSMOS 1334	13036	บรรล	20 JAN	3 FEB 82	
		13037	USSA		ZY	
		13038	USSR		ZY	
		13039	USSR			
		13049	USSR		FEB	
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		13050	USSR		FEB	
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1982 LAUNCHES (CONT.)	(CONT.)						
1 282 D33AH			14397	USSR		FEB	
. 0			14388	USSR		> 0	
			14392	USSR		X A	
			14393	USSR	19 APR	29 OCT 83	
			14485	USSR		> Q	
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1982 033AP			14437	USSR		17 NOV 83	
1982 033AS			14857	USSR		Y Y	
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			14861	USSR		1 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	
1982 033AX			14862	USSR		APR.	
1982 033AY			14363	US SR		3 APR 8	
1982 033AZ			14864	USSR		4 APR	
1982 033BA			14870	NS SH	19 APR	APR	
			1+871	USSR		APR 8	
			14057	esso		¥	
			14958	2550		14 MAY 84	
1982 0338H			14975	USSA		MAY	
1982 03383			14076	USSR		MAY	
			15165	USSR		AUG	
			15136	USSR	19 APR		
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			15109	USSA		AUG	
1982 03380			111111	USSR	19 APR	ĭ	
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1982 033BT			15114	SSS		AUG	
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			15133	USSA		AUG	
1982 03382			15134	USSR		P OC	
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			15304	USSR	19 APR	SEP 8	
1982 033ET			15934	US SR	19 APR		
1982 033EU			15937	USSR		AUG	
1982 033EW			15970	USSR		Z	
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1982 033FT			16167	USSR	0	ָ ה	
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1982 0348			13143	USSR	21 APR	FEB 8	
1982 034C			13833	USSR		20	
1982 0340			13836	USSR	_	FEB 89	
1982 0345			13837	USSR	_	FEB 8	
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1982 LAUNCHES (CONT.	•					
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1982 034L		13852	USSR			
		1,1853	USSB	21 APR		
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1982 0340		13950	2550 0551	21 APR	T T T	
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		ر د ز	USSR	21 APR	26 FEB 83	
		13361	USSR	_	FEB	
		13862	USSR	_	FEB	
		13363	USSR	_	FEB	
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		13865	USSR	_	MAR	
		13856	USSR	_	FEB	
034AB		13867	USSR	_	FEB	
	1352	13144	US SR	-	MAY	
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		13155	USSP	_	14 JUN 82	
1982 0350		13155	25.5U	 .	> ON	
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1982 036A CUSMUS	1353	13140	USSK	- n	A C	
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1982 C38F		14263	US SR	٥	A UG	
		69241	USSA	ō.	AUG	
N		14270	USSR		SEP 8	
a		14271	USSR		P OP	
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N		14276	USSR		¥O6	
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1982 038R		14280	USSR		26 NOV 83	
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1982 LAUNCHES	HES (CONT.)						
1982 C57A	C05M05 1377	1326	5	USSR		3	
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		13363	£.	USSR	NON	FEB	
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	COSMOS 1384	13303	3.3	assn		₹ 1	
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	COSMOS 1385	1336	<u>ر</u>	USSR		1	
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		13374	7.	USSR		AUG	
	PROGRESS 14	13361	5.1	USSR		AUG	
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		13407	76	USSR	27 JUL	AUG	
1982 076A	COSMOS 1397	13394	70	USSR	29 JUL	¥	9
		13395	95	USSR		APR	
1982 676C		139	81	USSR			
		13982	92	USSR	29 JUL	APR	
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	72041	USSB		4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	
	14025	USSR		APR	
	14031	USSR	•	24 APR 83	
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	13420	1055			
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COSMOS 1402	13461	2550		2 (
	13747	USSK	30 AUG	DEC	
	13748	USSA			
COSMOS 1403	13448	USSR	1 SEP	SEP	
	13450	USSR		SEP	
	13452	USSR	1 SEP	2 SEP 82	
	13542	USSR		A PR	
	13543	USSR	1 SEP	20	
	13545	USSR	1 SEP	2	
	13551	USSK	1 SEP	00.1	
COSMOS 1404	13449	USSR	1 SEP	5 SEP	
	13451	USSA	1 SEP	SEP	
	13453	USSR	1 SEP		
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	13544	USSR	1 SEP	29 OCT 82	
	13548	USSR	1 SEP	OCT	
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1982 LAUNCHES	S (CONT.)					
1982 C88H		14604	USSR	4 SEP	5 JAN 84	
982 08		14605	USSA	4 SEP		
1982 088K		14606	USSR	4 SEP	B NAU	
		14636	USSR	4 SEP	8 NAU	
۸.		14637	USSR	4 SEP	a D	
D.I		14638	USSR	4 SEP	DEC	
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1982 088V		14645	USSR	4 SEP	DEC	
		14646	USSR	4 SEP	Z	
		14647	USSA	4 SEP	ZYS	
		14648	USSA	4 SEP	21 FEB 84	
		14649	USSA	4 SEP	NY 7	
		14650	USSR		YAN	
1982 088AB		14051	USSR	4 SEP	ZY	
		14652	USSA	4 SEP	FE9	
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		13540	PRC		SEP	
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1982 U91A	COSMOS 1407	13546	USSR		6 OCT	
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1982 0986		13598	USSR		00.1	
1982 0980		13613	USSR		100	
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1982 LAUN	LAUNCHES (CONT.)					
1962 0990	•	13647	USSR		NO No	
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1177 1176 1176 1176 1176 1176 1177	385		13702	USSR		DEC	
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1983 LAUNCHES (CONT.)

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ت		14082	USSR	6 MAY		
1983 043K		14083	USSR		MAY	
1983 543L		14247	USSR	6 MAY	AUG	
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1983 074A	COSMOS 1483	14204	asso	20 JUL	AUG 8	
983	•	14205	ASSU.	20 JUL	3	
		14239	USSR	٠	AUG B	
1983 0740		14242	USSR	-	AUG 8	
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	COSMOS 1485	14210	USSR	•	AUG 8	
		14211	USSR	•	AUG 8	
		14216	USSR		SEP 8	
		14253	NSSR	26 JUL.	SEP 8	
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1983 C76F		14255	USSR	26 JUL	AUG B	
		14235	SO		€0	
	COSMOS 1487	14245	USSR		AUG B	
		14246	USSR	5 AUG	_	
		14240	USSK		AUG 8	
		14291	USSR		VOV.	
		14292	USSR		SEP	
		14295	USSR			
		14250	CAPAN	S AUG	SEP	
	COSMUS 1488	14251	NSS4		AUG	
		14252	USSR		P 00	
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		14302	USSR		SEP	
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		14284	USSR	17 AUG	AUG	
1983 086A	PRC 13	14288	PRC		SEP	
1983 0861		14289	PRC		AUG	
1983 086C		14290	PRC		A UG	
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1984 0178			14738	USSR			
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	PROGRESS 19		14757	USSR		APR	
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DESIGNATION CORE TAINCHES CONT.)		CATA: 100				
ALINCHES (CONT.)	NAME	CATALUG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
0.250		14848	USSA		3 OCT	
025E		4	USSR		¥	
0.25F		14852	USSR		MAY	
!	•	14856	3550 3550		20 00 00 00 00 00 00 00 00 00 00 00 00 0	
026A COSMOS 154	m	10/41	USSR 118.89		0 1	
5020		14.40	es sn	16 MAR	, æ	
787		14823	25 S O		7 MAR 8	
0.285		14829	USSR		OC T 8	
0298		14826	USSR		30	
0290		14827	USSR		APR 8	
030A C05MUS 154	5.4	14849	USSR		APR	
		14850	USSR		MAR	
0.000		14855	ASSU.			
0300		14889	USSR		APR	
0.305		14890	USSR			
0.40F		14891	USSA			
0300		14892	USSR			
HOEO		14893	USSR		APR	
7000		14895	USSR			
030K		14896	ussa		APR	
0318		14868	USSR	0	MAR	
031C		14869	USSR	Φ.		
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032A SQYUZ T-11		14872	USSR			
328		14873	บรรผ		5 APR	
032C		15345	USSR		DEC 8	
320		15346	USSR		5 DEC	
0334		14885	USSR		×	
0330		14886	USSR	4 APR	1 MAY 84	,
		14897	Sn		APR	\$ 1.60 1.00
0348 LDEF		14898	SO		Z 4	400
		14936	USSR		SEP	
0.34M		14937	USSR		VO6	
036A COSMOS 1548	84	14902	USSR			
0.368		14903	USSR	0	APR	
0360		14991	USSR			
0.360		14992	USSR	10 APR		
PROGRESS	20	14932	USSR			
		14933	USSR		APR	
039A		14935	Sn			
COSMOS 1	549	14938	USSR			
		14939	USSR			
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0 40 60		46641	USSA	22 APR	23 JUN 84	
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1 9861	LAUNCHE	LAUNCHES (CONT.)					
9851	041F		14945	asso	22 APR	27 OCT 86	
	C42A	PROGRESS 21	19691	rssn	7 MAY		
	0456		14962	USSR		MAY	
	044A	COSMOS 1551	14967	USSR			
	8770		14968	USSR		MAY	
	0440		98641	USSA	11 MAY		
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188	0508	•	14994	USSR		MAY	
	051A	PROGRESS 22	14996	USSR.	28 MAY	3	
186	0516		70041	USSR		×	
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486	054A	COSMOS 1568	15011	USSR	NOC T		
	0548		15012	USSR	N 7	2 5	
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386	054F		15042	USSR	1 2 2 1	1 NOV	
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÷	C54M		15050	USSR	-	13 JUL 84	
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984	0558		15028	USSR	NO7 9	支	
4	055C		15029	USSR	9 7CN	10 JUL 84	
	057A	INTELSAT V F9	15034	so	NOC 6	24 OCT 84	
1984	0578		15035	SO	NOC 6	11 JUN 04	
1984	058A	COSMOS 1571	15036	USSR	11 JUN	26 JUN 84	
3	0.586		15037	USSR		SON OS	
	058C		15038	USSR	11 JUN	16 JUN 84	
1984	0580		15065	asso	11 JUN	0 OCT	

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DEST GNATION		NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1984 LAUN	LAUNCHES (CONT.)						
1984 058E	7.4		15066	USSR	11 JUN	25 NOV 84	
400	U		15067	USSR	-	APR	
1984 (586	(7		15068	USSR		1 JUL	
	.		15069	USSR	-		
			15072	USSR		SEP	
	A COSMOS 1572		15046	USSA	-	Ž :	
	æ.		15047	ussu :		3	
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	ı u		15328	USSR		200	
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1984 0700	U		15092	USSR	30 JUN	6 JUL 84	
1984 070D	٥		15093	USSR	30 JUN	5 JUL 84	
1984 G70E	Į.		15094	USSR	-	¥	
1984 070F	ls.		15115	USSR	-	₹	
1984 0706	ٯ		15116	USSR	•	1 AUG 84	
1984 C70H	I		15117	USSR	-	Ę	
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1984 071C	U		15097	USSR		9 V O	
1984 073A	A S0YUZ T-12		15119	USSR		9 701 6	
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1984 074	A COSMOS 1582		15121	USSR	19 JUL	9 0 4	

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	15122	USSR	-	3	
	15150	2550	10 100	9 SEP 84	
	15151	855T	19 30L	90 V	
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COSMOS 1583	•	USSR		₽ ∩¢	
	15124	USSR		P OC	
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	15126	SSO	24 JUL	₹	
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	15173	USSR		>0 N	
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	15183	USSR		SEP	
C03M0S 1584	-	USSA	-		
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	15186	SSO	•	POC	
	15187	USSR		11 AUG 84	
	15191	USSR		P 00	
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	15143	USSR	31 JUL	YOU.	
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1984 1266		15443	USSR		DEC	
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1984 126D		15445	USSR		DEC	
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1984 1278		15448	USSR		APR	
1984 128C		15451	บรรห		DEC	
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1985 LAUNCHES	FS					
1985 0010		15466	JAPAN	V JAN	22 MAY 85	
985	COSMOS 1616	15467	USSR			
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NATIONAL DESIGNATION	NAME	CATALUG NUMBER	SOURCE	LAUNCH	DECAY	NO TE S
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1985 0296		15671	กรรล	16 APR	¥ ¥	
	COSMOS 1646	15653	USSR	18 APR	MAY	
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ດ		18624	USSR	18 APR	40	
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		18793	USSR		J J	
	COSMOS 1647	15655 11111	USSR	19 APR		
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1985 USZA	CUSMUS 1048	60001	25.50			
		15672	8550 8550	25 APR	\ \ \ \ \	
1485 0320		15673	SSS		MAX	
		15674	พรรก		MAY	
		15675	USSR			
		15676	USSA		MAY	
		15662	USSA			
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	COSMOS 1654	15734	USSR		7 AUG 85	
		15735	USSA		MAY 8	
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1985 039F		15855	USSR	NO2	7 JUL 85	

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US SR 1.3	23 OCT	
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1985 LAUNCHES	(ES (CONT.)					
1785 050U		16958	USSR	19 JUN	9 SEP 87	
	PROGRESS 24	15838	USSA		JUL 8	
		15839	USSR	21 JUN	•	
1985 C52A	CUSMUS 1883	15545	3550		CB NUL OF	
		15841	SSO		N N N	
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1985 0523		13004	1558		2 2	
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		15850	USSR		•	
1985 054A	COSMOS 1664	15860	USSR	26 JUN	5 JUL 85	
		15861	USSR		J J	
1985 054C		15866	USSR	-	Š	
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1985 059A	COSMOS 1667	15891	USSR		ž	
		15892	USSR		3	
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985	COSMOS 1668	15906	USSR	15 JUL	29 JUL 85	
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		15924	USSR		1 AUG 85	
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COSMOS 1671 16196 USSR 11 MUG 26 FEP COSMOS 1671 16196 USSR 11 MUG 26 FEP COSMOS 1671 16193 USSR 11 MUG 22 FEB COSMOS 1671 161930 USSR 11 MUG 22 FEB COSMOS 1672 163931 USSR 12 MUG 11 MUG 26 FEP COSMOS 1672 163931 USSR 12 MUG 11 MUG 27 FEB COSMOS 1672 163931 USSR 12 MUG 11 MUG 27 FEB COSMOS 1672 163932 USSR 17 MUG 27 MUG 27 FEB COSMOS 1672 163932 USSR 17 MUG 27 MUG 27 FEB COSMOS 1678 163932 USSR 12 MUG 27 MUG 27 FEB COSMOS 1678 163932 USSR 12 MUG 27 FEB COSMOS 1679 163932 USSR 12 MUG 27 MUG 27 FEB COSMOS 1679 163932 USSR 12 MUG 27 FEB COSMOS 1679 163933 USSR	TION		NUMBER	SOURCE	LAUNCH	DECAY	
COSMOS 1071 1090 1055R 1 MUG 20 F FB COSMOS 1071 105011 1055R 1 MUG 20 F FB COSMOS 1071 10501	LAUNCHES (CONT.)						
COSMOS 1671 18531 USSR 14MG 22 FEB 1850 1 14MG 22 F	24C		16196	USSR	1 AUG	DEC	
COSMOS 1671 1930, 0.0589 1.00 22 AUG 10 AUG 19 AUG	0440		16213	USSR		FEB	
COSMOS 1072 10721 10721 10528 2 AUG 11 AUG 1			18506	USSR		7 7	
COSMOS 1072 1075 1075 1075 1075 1075 1075 1075 1075	CONSTR		15951	2000		2 2	
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COSMOS 1672 16940 USSR 7 ANG 21 ANG 11 ANG 1	56		15966	ussa		AUG	
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	1760	16800	USSR	-	3 JUL	
		16801	SSO.			
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	COSMOS 1770	077	16897	rs su	9 YOU	2 FEB	
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1986 067L			17334	USSR		ָ בּ	
			17335	USSR		10 AON A	
1986 067N			17356	NS SO		ָ פָּעָ	
1986 C67P			17357	USSR		2	
1986 0675			18026	USSR		2 4 4	
			19027	388D		בו ה ה	
			16935	3880			
			0 (X8.5			
			E (7 U		ָבֶּילָ מַלְי	
0			10408	n v	י קרי	24 SFP 86	
1986 069C			\$ }	;			

			DECAYED OBJECTS			
STATE						
DESIC	NATIONAL DESIGNATION	NAME	CATALUG	SOURCE	LAUNCH	DECAY
1 266	LAUNCHES (CONT.)					
1986	0690		16941	ns	5 SEP	
1986	69		16942	ns		NOV
1986	ç		16943	S o		DEC
1986	9690		77001	Sn :	5 SEP	100
080	1000 1000		0.000	n (n	o co	30 MAR 8
1986	069K		. 3	SO		SEP
1986			16948	NS		
1986	M690		0 T O O O O O O O O O O O O O O O O O O	S O		
1 9 6 0	2000		10900	s sn	SFP	21 001 8
. 0	n690		1701	S n		MAR
О.	069R		17020	Sn	5 SEP	0CT
0 0	0698		17021	SO.		5 5
1980	1600		1,022	SO (SS)	25. SEP.	31 UC 1 8
Ò	371E		16965	asso.		
1986	072A C05M05 17	781	16966	USSR		DCT
•	0.728		16967	~SSN		100
1986	6 72C		16974	USSE 1880	17 SEP	ZO SEP 8
1 986			16989	NSSU NSSU		MAY
1986	072F.		06651	USSR		
1966			16601	USSR		DEC
1.586	C 72H		16992	USSR	17 SEP	2 (
1 980	7720		1049	2880 1880	30 SFP	
1986	075B		16994	S S S		\ \ \ \ \
1986	0.75C		16995	USSR		>0 N
1986			16998	USSR	3 OCT	> 0 2
1986	076A PRC 19		17001	PRC	6 OCT	23 OCT 8
1 680	0.160		17005	PRC C		500
1986	0760		17028	PRC		
1986	077A CUSMOS 17	784	17003	USSA		> 0
1986	0775		17004	SSS	•	0CT
000	0 /86		12033	0.554	13 001	
1 086	0763		17039	USSA	, 0	DEC
1986	2620		17040	USSR		DEC
1986	80A COSMOS	1786	17042	USSR		
€ .	808	!	17043	USSR	22 OCT	APR
no o	BIA CUSMUS	18/1	44071	USSR	22 001	S ADV S
000	0.918 0.910		17045	2000		-
1086	0810		17051	assn		Ž
1986	C81E		17062	USSR		DEC
œ	0816		1 7004	USSR		NON 8
1986	082B		17647	USSE	25 OCT	
1 985	0820		1,7048	מממא	_	

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		DECAYED ORJECTS				
IN EMPANATION DESIGNATION	NAME	CATAL OG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1986 LAUNCHES	(CONT.)					
1985 0838			USSR	27 OCT		
86 084A	COSMUS 1789	17054	USSR		NOV	
		17055	บรรห		70N	
		17072	USSR 1550	31 001	27 AUG 87	
1980 0840		12026	855		7 C	
		17075	USSR		NO.	
		17076	USSR		S JAN	
H760		17071	8880		F.E.B.	
C85A	COSMOS 1790	17050	2000	AON 4	202	
1986 6850		17087	1558 1558	2 4 2 5 2 6 3 7	21 NOV 86	
		17086	355		• •	
		17087	USSR		> ON	
		1 7088	USSR		NOV	
1986 0856		1 7089	USSR		OE O	
087A	COSMOS 1792	17068	USSP		ZY	
		17069	0.559		> C	
		17079	USSR		ט מ	
		17080	0.000) NON 00	28 UEC 80	
1080 0905		17149	8550	>0% 81		
		17135	USSA			
		17136	USSR		DEC	
	COSMOS 1804	17170	USSR			
		17180	USSR		DEC	
		17243	USSR		بر د د	
1986 0950		\$50Z1	2000	4 4 0 0		
		17246	2880 2880		APR	
986		17252	USSR		APR	
1986-0968		17182	sn		MAR	
		17214	USSA		FEB	
986 C98C		17215	asso	12 DEC		
V660	COSMOS 1807	1/21/	OSSE COSE		23 JAN 87	
1986 0998	0.44.00	17262	2552		א ה ה	
201		17263	9551		ָ טַנּי טַנּי	
		18345	asso		SEP	
		18346	USSR			
_		18347	USSA	ø		
-		17265	USSA	ø	FEB	
		17266	USSR	۰	1 JAN	
1986 103E		17276	USSR	•	27 JAN	
1987 LAUNCHES						
		6 6 7			1	
002A	COSMOS 1811	2621	300 S		מו ב	
1987 002B		17293	USSR	2 4	10 JAN 87	
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		DECAYED OBJECTS				
INTER- National		CATALUG	:			
Designation	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1987 LAUNCHES	IES (CONT.)					
1987 OC4A	COSMOS 1813	17237	USSR	15 JAN	13 MAR 89	
1987 0048		17298	บรรล			
		17351	ussa			
487		17362	USSR		FEB	
186		17409	USSR			
		17490	USSR		MAR	
		1/516	3550 3500 3500		, Kr	
1980 00484 1987 00484		17330	15.50	N 47 - 17 -	15 APK 87	
1987 004CF		17805	asso		AUG	
		17894	USSR		> OX	
		17936	USSR		>DN	
		13030	USSA	15 JAN	200	
		18029	USSR		Z S	
		13514	USSR	15 JAN	NO V	
	PROGRESS 27	17299	USSA		25 FEB 87	
1987 0058		17300	USSR	16 JAN	ZYO	
	COSMOS 1815	17326	USSR		> 0 ×	
		17327	USSR			
		17329	USSA		X C	
	V CALL ADMOOD	17550	2550	22 CAN	25 FEB 87	
1987 0100	5	17366	USSR		2 L	
		17367	USSR		MAR	
		17369	USSR		FEB	
1987 GILB		17370	USSR		FEB	
		17399	USSR		ž	
		17400	USSR		¥	
		19229	LAPAN		202	
		19238	SAPAN		001	
1987 0125		1040	24041	 	22 NOV 89	
		00404	TAPAN		9	
		19523	JAPAN		FEB	
		13682	JAPAN		9 FEB 89	
	SUYUZ TM-2	17432	USSR		Ę,	
		17483	USSK		FEB	
187		16242	USSR		NAC 9	
	COSMOS 1819	17484	USSR		14 E	
786		17435	USSR		יו שוני	
		17486	8880			
1987 0140		184/1	USSR	יי ב ביי ביי		
		42611	2000		¥ 0	
0 0		17531	0551		100	
- 180	CDSMGS 1820	17523	USSN		M M	
987		17524	USSR		FEB	
987	COSMUS 1822	17533	USSR	F	MAR	
786		17534	USSR		MAR	
1987 019C		17564	USSR	19 FEB	11 MAR 87	

			DECAYED 39JEC	CTS			
	INTER- NATIONAL	2 2	OATALOG BERE	SOURCE	LAUNCH	DECAY	NOTES
	21 21 21 21						
	1987 LAUNCHES	HES (CONT.)	- · · · · · · · · · · ·				
	C010 7801		17569	ASSO	19 FEB	17 MAR 87	
. •			0.1571	USSR		APR	
-			17571	USSR		MAR	
-			17572	SSU.		MAR.	
	87		17573	X880	19 FEB		
	1987 019FM		22251 23621	E54 1550)	
		4581 SOMSOO	2007-	8880		APR	
	1087 0218	1	17560	SSO		MAR	
-1		PROGRESS 28	17564	USSA		MAR	
	1987 023H		17505	HS SD		KAK	
		C05M05 1826	17577	USSA			
-	0.258		17578	USSR		MAR	
			17579	rssn			
-			17590	855D		Y S	
			17591	8880		Y .	
			17785	ສສຸກ		Z :	
	1987 0256		17786	2887		9 0	
			18111	XXXX	¥ 4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		
	7967 7961		00//1	0550 0551			
			17793	8550	11 MAR	HAY	
	987		17791	USSA		18 APR 87	
	786		17612	ASSU		MAR	
			17613	USSR		MAR	
			01221	USSR		SEP	
	287		17707	SO.		A PR	
			17708	ASNONI		U 6	
	787		17846	asso.	SI MAK		
	987		1/851	ממאר	٠ ،	9 6	
	1987 C31A	CONTROL 1834	/ # O / T	5550 6550	K 00 K		
		THE BUT SOMEOUT	04471	ass sn			
	1987 0328		17650	USSR	9 APR	APR	
		COSMOS 1836	17876	USSR	•	DEC	
	1987 0338		17877	USSA	ø	20 APR 87	
			19058	USSR	ø		
			13587	NSSA		3 060	
			18583	USSR		DEC	
	1987 034A	PROGRESS 29	17878	USSR		MAY.	
	987		01811	USSA	Z1 APR	A PR	
		COSMOS 1837	17880	2550		0 4 4 4	
			16871	2005		* * *	
				2000			
			51VI	YAND T		2 2	
			010/1	2000			
	1987 (35)		17018	255D	22 APR	2 MAY 87	
			17905	8550	4	APR	
			90001	2557	24 APR	·œ	
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NATIONAL DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTE
1987 LAUNCHES	(ES (CONT.)					
		17909	USSR		12 AUG 87	
987 0		17962	USSR	24 APR		
	COSMUS 1841	179071	USSR		MAY	
1987 0378		17908	USSR		22 MAY 87	
1987 0376		•	USSR		MAY	
		17966	AS SD	-		
		17967	USSR		¥	
		17968	USSR		N N	
	C05M05 1843	17940	USSR		WAY	
87		14041	USSR		¥¥	
		17963	USSR	S MAY	¥¥	
1987 0390		13001	USSR		AUG	
1987 039E		18002	USSR		รุ	
87		19003	US SA			
		18022	USSA	S MAY		
		17970	A880		14 MAY 87	
		17971	USSR		MAY	
087	COSMOS 1845	17975	as so		MAY	
087	,	17976	asson O		Z S	
087		18013	es so		100	
		14014	USSR		AUG	
		18015	USSR			-
		19015	USSR		S S	
		19019	USSR	13 MAY	OEC	
		18020	กรรพ		SEP	
1987 0423		18023	USSR		SEP	
1987 C44A	PROGRESS 30	17999	USSR			
1987 0448		19000	USSR		MAY	
1987 C45A	COSMOS 1846	18004	USSR	21 MAY	Ž	
		16005	USSR		MAY	
1987 0450		18006	USSR		MAX	
		13087	USSR			
1987 C45E		18088	NSSA		Z,	
		13089	USSR	21 MAY	SEP	
		18090	USSR		Š	
1987 C45H		19091	USSR		4 AUG	
1987 0453		18092	USSR		3	
1987 045K		13093	USSR	_		
1987 045L		19094	USSR		ZY	
1987 C46A	COSMOS 1847	18011	USSR		¥	
		18012	USSR	ø	MAY	
1987 047A	COSMOS 1848	19017	USSR	•	z 5	
37		18018	USSR	60	12 JUN 87	
1987 C47C		19021	USSR	80	MAY	
1987 0470		18097	USSR	80	Z S	
87		19189	USSR	28 MAY		
1987 0471		13190	USSR	80	3	
87		13084	USSR		200	
		18085	USSR	NET 5	15 AUG A7	
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DESTGNATION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
LAUNCHES (CONT.)						
0738		18329	USSR	4 SEP	6 SEP 87	
0.73C		19330	USSR	4 SEP	SEP	
0.7.3F		1000 to 1000 t	USSR			
7 2 7		1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ָר בּיבּי	2 2 2	24 OC 87	
0750		18372) NG C	9 SEP		
0750		18373	PRC	9 SEP	SEP	
COSMOS 188		13343	USSR			
c 76 8		18344	USSR		SEP	
		19035	USSR		APR	
COSMOS 188	2	34	USSR	15 SEP	001	
0776		19349	2 S S S		SEP	
£ 7.7C		18389	USSR	15 SEP	00.1	
0770		18390	US SA		ğ	
0.7.7E		18391	USSR		20	
5/ / 5		18393	USSR		ğ	
C780		19353	FSA		Š	
0.790		13358	USSR		SEP	
		13364	Sn			
COSMOS 1886	v	18366	assn	17 SEP	À Q	
		19367	essn:		SEP	
9		\$ 10 m	2550 2550	17 SEP		
ב ככשאפחאא	•	0/001	28.50		2 2	
COSMOS 188	7	1970	8880		12 OCT 87	
		30 CC	35.51		֓֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	
0.000		13400	2550 2551			
0.837		0040	0551		֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	
0.0848			95.51		֓֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	
1980		13420	05511	-	3	
		8305	05 ST		3 5	
0.000		76.461	7551		. d	
0850		18437	65.511	100		
CBSE		18438	USSB		2	
C85F		18439	8880		ر ا	
0.856		13440	USSR		L	
C85H		13567	USSA	9 OCT	2	
096A COSMOS 1890	0	19396	SSA			
0.86.ជ		19397	USSR		00.1	
U89A COSMOS 1893	ED.	13432	asso	22 OCT	DEC	
a690		13433	USSR		100	
089E Z		18359	asso		SEP	
n060		13442	ns		2	
0016		• 4	9591		5	
C100		\$ 3 3 T T	100	200		
		07707	2000		֓֞֝֟֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	
	,	1900	USSR	_	X Y	
COSMOS 189	ĸ	19401	USSR		NOV	
0923		13492	USSA	_	80	
2 92 C		18572	USSR	>CN	74 VON 97	
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DESTIGNATION	NAME	NOMBER	SOURCE	LAUNCH	DECAV	NOTES
1987 LAUNCHES	HES (CONT.)					
4000		13574	USSR			
. r		10000	S		> 0 2	
- 60		19582	USSR			
287	COSMGS 1896	⊕	SSU.	3	25 DEC 87	
		18536	USSR	4	>0N 0	
		Ç	NSSA		> 1 0 2	
	PROGRESS 33	19568	USSR	20 NOV	DEC	
		18569	NSSR		23 NOV 87	
		18576	USSR		2	
		18577	ussa	26 NOV	Š	
087		18579	USSR		Į,	
987		14580	78S0		18 AUG 88	
	COSMOS 1899	18625	us sa		9	
		13625	USSR	7 DEC	DE C	
		18627	us sa		2	
		19705	NSSN		S JAN	
782		19706	NSSN		DEC	
7 40		18707	USSR	7 DEC	22 DEC 87	
740		18708	USSR	7 DEC	DEC	
		19632	USSR		DEC	
987		13633	USSR			
186		18636	USSR	10 DEC		
1		19553	USSR	12 DEC		
-		19589	SSSO			
-	COSMOS 1901	18666	755D		ט ט ט	
		18667	26.60		י בי	
1987 103A	COSMUS 1902	19668	38.50	730 61		
		18000	K0001	, -	2	
-	S0VUZ 1M-4	2000	as vi		DEC	
٠ .		10000	8557		>0	
3661 1861		19251	2550	21 DEC		
		10101	2550 2550		Š	
3001 1061		1925	USSR		Z O O	
٠.		19255	USSA		3	
		18702	USSR		FEB	
		19703	USSR		247	
•		18977	USSR		MAR	
	COSMOS 1905	18711	USSR	25 DEC	OAN B	
-		19712	USSR			
• -		18759	USSA	25 DEC	12 JAN	
		18760	USSR			
-		19761	USSR		15 JAN	
٠ -		19762	SSO	25 DEC	m	
-		14763	USSR		ZYS	
-	COSMOS 1906	18713	USSR	26 DEC	MAR	
-		19714	USSR			
-		18825	USSR		FEB	
-		18826	USSR		u. eo	
		18827	USSR	6 DE	23 FEB 88	

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100 100	INTER- NATIONAL DESIGNATION	NA MR	CATALOS NUMBER	Saurce	LAUNCH	DECAY
1982 1982 1982 1982 1982 1982 1982 1982 1983	JB7 LAUNCHES					
1982 1982 1983 1985 1987 1987 1988 1988 1989			18629	USSR		APR
100 100			13829	USSR		Z MAR
1992 1993 1993 1993 1994	-		133330	USSE		1 FE9
100 100	• -		16632	855D		L AND L
1004 1004 1004 1004 1005			13838	USSA		FEB
1000 1000			18841	USSR		3 FEB
100 kg 1			19442	asso		9 FEB
100 AC 1			E 4881	85SD		2 FEB
100 AM 1			1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	** SO		¥ 0
100 AL 1			1000 T	WSSD.		1 4 1 4
1990 USS4 COSMUS 1990 USS4 COSMUS USS5 COSMUS			19895	2550		X X
100 100	-		18897	USSA		MAR
100 AL 1			18900	USSR		MAR
1004A 1			18950	assu		MAR
100 100			18973	USSR		¥ Y
1100 COSMOS 1907 1972 0.055R 27 DEC 260 DEC 11 JAN 1100 COSMOS 1907 1972 0.055R 29 DEC 12 JAN 1100 COSMOS 1907 1972 0.055R 29 DEC 12 JAN 1100 COSMOS 1907 1972 0.055R 29 DEC 12 JAN 1100 COSMOS 1912 0.055R 29 DEC 26 REB 1100 COSMOS 1912 0.055R 29 DEC 30 MAR 1100 COSMOS 1915 0.055R 20 JAN 23 JAN 23 JAN 20 DEC 30 MAR 1100 COSMOS 1915 0.055R 20 JAN 17 REB 20 JAN 17 REB 20 JAN 17 REB 20 JAN 17 REB 1985 0.055R 20 JAN 17 REB 20 JAN 17 REB 1985 0.055R 20 JAN 17 REB 20 DEC 30 MAR 1985 0.055R 20 JAN 17 REB 20 JAN 17 REB 20 JAN 1885 0.055R 20 JAN 17 REB 20 JAN 1885 0.055R 20 J	- ·		18716	esso.		DEC
1100	٠,		71/81	USSR		DEC
1100 1972 1972 1972 1973 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1977 1975 1977 1975 1977		0	19720	25.50 25.50		7
1100		•	13721	8550 8550		Z Z
1110E			18724	USSR		Z
110E 110E 1110E 1110E 1110E 1110E 1110E 1110E 1110B 1110E 1110H 11			19768	USSR		6 FEB
1100 1100 111000 111000 111000 111000 111000 111000 111000 111000 111			19769	asso.		×
LAUNCHES LAUNCH			18770	USSR		DEC.
1303 138048 1950 1958 29 DEC 28 FEB 1900 19058 29 DEC 28 FEB 1900 1958 29 DEC 28 FEB 19795 19809 1958 20 JAN 23 JAN 20 JAN 29 JAN 29 JAN 20 JAN 29 JAN 20 JAN			12727	85.50 GS 87.1		1 4 A
LAUNCHES LAUNCHES 0034 PROGRESS 34 19795 USSR 20 JAN 4 MAR 0035 PROGRESS 34 18809 USSR 20 JAN 9 FEB 0043 COSMOS 1915 18809 USSR 26 JAN 7 FEB 0040 USSR 26 JAN 17 FEB 0040 USSR 26 JAN 17 FEB 0040 USSR 26 JAN 21 FEB 0045 USSR 26 JAN 21 FEB 0046 USSR 26 JAN 23 FEB 0047 USSR 26 JAN 23 FEB 0054 USSR 3 FEB 2 JAN 0054 USSR 3 FEB 2 JAN 0054 USSR 3 FEB 2 APR 0054 USSR 17 FEB 19 FEB 0054 USSR 17 FEB 19 FEB 0054 USSR 17 FEB 19 FEB			18808	USSR	. 0.	8 FEB 8
0034 PROGRESS 34 19795 USSR 20 JAN 4 MAR 0036 18796 USSR 20 JAN 23 JAN 0044 C0SMOS 1915 18809 USSR 26 JAN 7 FEB 0040 USSR 26 JAN 7 FEB 0041 18851 USSR 26 JAN 17 FEB 0045 18851 USSR 26 JAN 21 FEB 0046 18853 USSR 26 JAN 27 FEB 0054 18853 USSR 26 JAN 27 FEB 0054 18853 USSR 26 JAN 27 FEB 0054 18853 USSR 26 JAN 27 FEB 0058 18853 USSR 26 JAN 27 FEB 0058 18823 USSR 3 FEB 29 FEB 0058 18823 USSR 8 FEB 2 ADR 0058 18823 USSR 8 FEB 5 ADR 0058 18849 USSR 8 FEB 17 FEB	LAUNCHE	,				
000 00 00 00 00 00 00 00 00 00 00 00 00	0	'n	19795	USSR		MAR
0004A COSMOS 1915 19809 USSR 26 JAN 9 FEB 004C 18910 USSR 26 JAN 7 FEB 004C 18851 USSR 26 JAN 7 FEB 004C 18851 USSR 26 JAN 17 FEB 004E 18852 USSR 26 JAN 21 FEB 004F 18853 USSR 26 JAN 21 FEB 005E 18953 USSR 26 JAN 27 FEB 007A COSMUS 1916 18823 USSR 3 FEB 29 FEB 008A 18824 US 8 FEB 1 MAR 008B 19849 US 8 FEB 5 MAR 009B 19849 US 8 FEB 5 MAR 009B 1985A US 8 FEB 17 FEB 009B 105B 17 FEB 17 FEB	0		18796	USSR		m
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074E 18851 USSR 26 JAN 21 FEB 074E 18852 USSR 26 JAN 21 FEB 074E 18953 USSR 26 JAN 21 FEB 075A USSR 3 FEB 2 FEB 077A USSR 3 FEB 2 FEB 077A USSR 3 FEB 2 FEB 078A USSR 8 FEB 1 MAR 078B US 8 FEB 1 MAR 078C US 8 FEB 2 APR 078C US 8 FEB 1 MAR 078C US 0 FEB 1 MAR 079C USSR 17 FEB 17 FEB 17 FEB 17 FEB 19 FEB			18850	asso.		¥ 1
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18854 USSR 17 FEB 19 FEB 8	0	2	385	USSR	~	7 FEB 8
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		CATALOG				
ESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
988 LAUNCHES	ES (CONT.)		-			
988 010A	COSMUS 1920	09881	USSR		D MAR BB	
60		13361	USSR		F1	
		18924	USSA			
(E) (E)		18925	USSR		MAR	
		18926	USSR		APR	
		18930	USSR		APR	
		18933	USSR	18 FEB		
		18934	USSR		MAR	
988 C10J		18935	USSA	18 FEB	MAR	
	CDSM05 1921	18975	USSA	19 FEB		
		19876	USSR	19 FEB	MAR	
		00000	USSR	19 FEB		
		18916	USSR	19 FEB	MAY	
		19017	USSA		Š	
		18913	USSR	19 FEB	>	
		18919	48SD		15 APR 88	
		18920	USSR		2 2 7	
		18921	USSA	19 FEB		
		13673	ZAGAL	19 FEB	26 FEB 88	
		13882	USSA	26 FEB	5 APR 88	
		18884	USSR	26 FEB		
		18923	PRC		3	
	COSMOS 1923	18931	USSR			
		18932	USSA		MAR	
		18936	USSR		MAR	
		19987	USSR		APR	
		18988	NSSA		Y Y	
1988 015F		18984	USSR		Y	
988 0156		18990	USSR		MAN	
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		09001	SSO			
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		91061	OS		16 JUN 88	
	0.00 L 0.36	13015	US SR		18 MAY 88	
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DESIGNATION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1988 LAUNCHES	ES (CONT.)					
1988 036A	C05M05 1938	19041	USSR	11 APR		
~		19042	USSA		APR 8	
20		19065	USSR	_	APR	
		19066	USSR	_		
1988 030E		19061	0.55	11 APR	MAN (
o oco		19063	#660 #680		30 APR 88	
	FOTON 1	19043	USSR	4	APR	
		19044	USSR	4		
		19084	USSR		MAY	
		19085	asso:		5 MAY	
1984 031E		10000	USSR	14 APR	15 MAY 88	
		26001 26001	\$ S C C		X Y	
		13075	2500	26 ADB	26 APR 88	
	COSMOS 1941	19079	3000		MAY	
		19080	USSA		MAY	
		19091	USSR			
		19087	USSR		MAY	
		1,20,96	USSH		MAY	
		19097	USSR		MAY	
1988 0336 1988 0 8801		86061	USSR		× i	
1983 CJSH 1988 035 I		66061	USSR	27 APR	6 MAY	
1988 0368		10001	100 C			
		1000	8550		· >	
		1.9093	USSR	6 MAY	MAR.	
		19095	USSR		Ŋ	
	COSMOS 1942	19115	USSR		4	
		19116	USSR		MAY	
		19273	asso.	Ν.	킼	
4000 0000 C	PRUGRESS SO	71161	USSR	m 1	N :	
1988 C414	496 SUNSO	19123	USSR HSSB	13 MAY	15 MAY 86	
986		19124	2550	0	¥	
	COSMOS 1945	19131	USSR	•	¥	
		19132	USSR		Š	
988		19199	USSR	0	Ž	
		1,3200	USSR	٥	Z S	
		19201	USSR	•	N O O	
989		19232	USSR		Z S S	
£ 60 0		19203	USSR	0	S JUN	
E :		19166	USSR	_	¥	
		19161	USSA			
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(A)		19239	USSR	Z6 MAY	3 JUL 8	
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1988 C44C		19457	USSR		001	
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1983 LAUNCHES	S (CONT.)					
1088 C454	O PO I SOMEON	19193	USSR		23 APR 90	
1988 0458	•	19194	USSR	28 MAY	× X	
	COSMUS 1951	19197	USSA		2	
		19198	NS SR		200	
		19212	25 SD	31 MAY	17 301 88	
1988 0470		19213	USSR S	_		
۵۵		19214	28 ST	NIT C	7 SEP	
	SOVUZ TM-5	\$0.26I	2000 2000		Š	
		50261	855T		NOV	
		99961	555CD	10N		
		4000	NS SO		N N N	
AV40 8891	20A1 50M500	20261	SSO	11 JUN		
		00000 00000	USSR	11 JUN	-	
		00001	asso	NOC 11	25	
0500 0861		19265	USSH		팃	
		13266	USSR	11 JUN	Ę	
		13267	USSA	11 JUN	2 7	
		69201	USSA		z S	
1 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1		69261	USSR	11 JUN		
		19273	USSA		Š	
		19224	SO		MAR	
		19252	SD		Š	
100		19296	Sn		001	
		19389	Sn		SEP	
	COSMOS 1955	19258	USSH		AUG	
689		19259	USSR			
988		19262	USSR		Z S	
900	COSMOS 1956	19263	USSR	23 JUN		
		19264	USSR		2	
1989 0550		19275	US SR			
1988 0550		19279	asso	23 JUN	23 AUG 60	
1988 C55E		13280	0.55R	200 00	2	
1988 055F		19284	SSSO:	NOC 52		
		19285	2000	NOC CZ	904	
		0876.1	מייים מייים		1	
	COSMOS 1957	0/2/1	9551		ב ב	
		1921	8557		킼	
		10307	assn	7 JUL	27 JUL 88	
		20.65	assn		24 JUL 88	
		03044	assn		J J	
		13021	8550		AUG	
		46.00	assn			
5 (+ 00 CC 1	8880	~		
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		7076	8550		J.	
		19293	8550	12 JUL		
	BACK SOMEON	26261	USSR	14 JUL	MAR 8	
4000 880 I	COMMON 1400	12601	USSR		A JAN 8	
		• # 1				

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121F2	_		CATALOG				
DESIGNATION	TION	NAME	NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1988 LA	LAUNCHES (CONT.)						
400	11A DDDGGFSS 37		19322	USSR	18 JUL	AUG	
	,		32	USSR	-	J J	
	2000		19335	ESA	21 JUL		
	C65A C0SM0S 1960		19339	USSR		APR	
	C65H		19339	USSA		ZY	
	0650		19340	USSR	28 JUL		
	15C		20190	USSR	-	V C	
	0650		19341	USSR		000	
	0.65E		19342	USSR		00	
	0.65F		19343	USSA	28 JUL	00	
	0.656		19506	USSA		2 :	
	C65H		19507	USSR		Z	
	065J		19551	USSR		Z	
1983 06	0.6.5K		19552	USSR	28 JUL	100	
	U65L		19602	USSR		FEB	
	065M		19603	USSA		FEB	
	G 66 E		19345	USSR		V V	
	0.66C		19346	USSR	1 AUG		
	0665		19349	USSR		2 JUN	
	067A PRC 23		19368	PRC		V POC	
			19369	PRC		V P	
	0 67 C		19370	Dad	-	YOU.	
	0.670		19371	PRC			
	67E		19361	PRC		YOU'	
O	267F		19382	PRC		904	
0	0676		19383	D&G		9	
1988 0	67H		19474	PRC		2 :	
0	068A COSMOS 1962	~	1,372	USSR	9 V O		
	0683		19373	USSR	-	90	
1988 0	068C		19374	USSR		504	
	0680		19403	USSH			
	068F		19405	USSR		ָּהָ הַ	
1988 C	0686		19406	USSR		9 :	
	0 68 H		19407	USSR		904	
60	9690		19378	USSR	12 AUG		
	D690		19379	USSR	-	ָ ער פֿער ער פֿער	
	059E		19454	USSR		, K	
	0.59F		19438	USSA		֓֞֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	
1988 0	0690		7,77,70	USSA		10 SEP 00	
1988 0	070A C0SM0S 1963	т.	1,3384	USSA		֓֞֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֓֓֓֓֓֡֓֡֓֡	
	0.708		19385	asso	16 AUG	9 :	
1989 0	0718		19398	USSR		9 0	
	071C		19399	USSR	-	NOG B	
	72A COSMOS 1964	4	19612	บรรค		SE D 8	
90			19413	USSR		AUG 8	
- 00	972C		19417	USSA	-	AUG 8	
	0.720		12418	USSA	-	AUG B	
	37.5		19469	USSR	-	SEP 8	
	772F		19470	USSR	23 AUG		
- 10	0720		19471	USSR	23 AUG		
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NATIONAL		CATALOG				
DESIGNATION	ION	E NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1985 LAU	LAUNCHES (CONT.)					
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	. 0	19523	as so		100	
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	F.	19525	USSA	m	100	
1988 0736	35	19526	USSR	m	100	
1988 075A	SA SOYUZ TM-6	10443	rssn		DEC	
1988 0750	ຄະ	19444	USSA	29 AUG	31 AUG 88	
	59	19446	USSR		30 SEP. 88	
		19447	USSR		SEP	
	A C05M0S 1967	19462	USSR	6 SEP		
	28	13463	USSR	6 SEP	15 SEP 88	
	×	13465	USSR	6 SEP		
	0	19466	USSA	6 SEP	8 SEP 88	
	JE.	19492	USSR	6 SEP		
	ï.	19493	USSR	6 SEP		
	9.0	19494	USSR	6 SEP	23 SEP 88	
	ĭ	19497	USSR	6 SEP		
	7	19498	USSR	6 SEP	SEP	
	×	19499	USSR		SEP	
R 8 6		19437	ESA		ZY	
1988 082A	2A COSMOS 1968	19488	USSR	9 SEP	SEP	
988	8	19489	USSR		SEP	
	Q.	19528	USSR		OC.	
986	ili i	62561	USSR			
		19530	USSR		SEP	
	3A PROGRESS 38	19486	USSR		NON NO	
		16701	USSR	0	SEP	
	A COSMOS 1969	10405	USSR	15 SEP	> Q	
	۰	96761	USSR		SEP	
	Ų	19500	USSR		SEP	
	00	19504	USSR		SEP	
		\$0\$ 6 1	NAGAL		SEP	
1988 0878	AURIZUN I	61661	ISRAEL	19 SEP		
0 0	00 N 00 D	02641	ISKAEL		2 1	
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		10001	N S S S		5	
	58	19572	USSR	22 SEP		
	In	19575	USSR	22 SEP	A Q N	
0	つ	19591	USSR		FEB 8	
	100	19542	asso.	•	9 001	
00 c		19543	assa	29 SEP	5	
1968 091A	1A 515 26	17547	sn	ο.	3 OCT 88	

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NATIONAL DESIGNATION		CATALUG NAME NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1988 LAU	LAUNCHES (CONT.)					
1988 3928	Ð	10565	USSR		100	
1988 0920		19556	USSR	m 1	00.1	
1988 094A	A COSMOS 1976	19582	0.550	13 001	27 OCT 88	
	c 0	41961	855D	ח ר	¥ 0.4	
	9	19615	USSR	m	NO.	
	Ę	91961	USSR	2	DEC	
	u. (19617	USSA		10 DEC 88	
1989 COSE	2.20	19597	455D	20 OCT	OCT.	
988	· U	19598	USSR		100	
	G	19609	USSR		N 0 V	
		1961	NS SN		202	
1989 097A	'A COSMOS 1978	19612	CSSA	27 OCT	10 NOV 88	
1988 0978 040	a y	10013	X600	27 OC1	2 2	
	ءِ ب	19628	as so			
	ı ļu	19629	SSO	27 OCT	> 0	
	ī	19630	USSR			
		16961	USSR		NON	
_	BURAN	1963	85SD		> L	
	A COSMOS 1979	14041	2000		40 JON 81	
1980 101	n e	07000	8880			
	A COSMUS 1981	13651	USSR			
-	18	19652	USSR		DEC	
	õ	19653	USSR		> 0 2	
_	۰ ي	19654	USSA		>	
-	ا شَا	10000	85SD			
1988 1035	<u>.</u>	100/4	3550 9551	AON 42	0 DEC 88	
• ,		19676	USSR		9 9 0	
-	A SUYUZ TM-7	13660	USSR		APR	
7	:5	19961	USSR	-	NOV	
_	5A COSMUS 1982	19662	USSR		DEC	
~	99	19663	88SO			
1988 1950	, (# 0 V 0 P	2000	AON OF	2 2	
1963 1056	2 4	00001	8550			
. –	1	19691	SSO		NAO	
. ~	A STS 27	0.0001	Sn		DEC	
	COSMO	19672	USSR	8 DEC	DEC	
1988 1078	a,	19673	USSR	8 DEC		
1988 107C	Ž,	11961	USSR		DEC	
1983 1070	ō	19678	USSR		DEC	
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DESIGNATION		SOURCE	LAUNCH	DECAY	NOTES
1988 LAUNCHES (CONT.)					
1988 1088	19664	USSR			
988	19685	USSR		DEC	
	19705	USSA		FEB	
1983 1108	19706	USSR			
1986 1125	19722	USSR	22 DEC		
-	19724	rssn:		ָ מ מ	
989	13721	3550 2550 2550 2550 2550 2550 2550 2550			
983	13720	X6.00		E 3	
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988	21161	X000	23 05 0		
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988	0880	¥ 0 0 0			
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988 1	#	2000		3 =	
988	00000	2000	23 050		
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988 1	56002	2000			
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	20102	2007		֓֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	
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	62761	95.51		Z	
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1988 1964 COSMOS 1986	35 COL	es so	•	FEB	
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1989 LAUNCHES					
1989 0010	19752	USSR		NYO	
989	19756	USSR			
	19757	USSR	NAC 21	14 JAN 89	
1989 002C	19794	USSR	N	FEB	
1969 002D	1,4795	USSR	N	FEB	
	19758	USSR	6 0	E 69	
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	19760	asso	NAU BI	Z :	
	19761	USSR	80	Z Y	
	19762	USSR	80	Z 4	
1989 003F	19778	USSR	00	MAR	
1989 0036	19779	USSA	60	FEB 8	
1989 003H	19780	USSR	60	€	
LE00 9891	19791	USSR	18 JAN	N A	
1989 003K	19782	USSA		8 FEB 8	
1989 0048	1,766	USSR	٥	8 247	

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1990 012K		20490	USSR		MAR	
		20492	USSR		MAR	
1990 012M		20493	USSR		FEB	
1990 C14A	SUYUZ TM-9	23494	กรรช	11 FEB	V OV	
		50495	USSR	11 FEB	.	
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1990 0160		20501	USSR			
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1990 0208		20514	USSR			
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1990 024A	COSMOS 2062	20529	US SK		¥ D	
1990 0248		20530	USSR	22 MAR		
1990 024C		20542	USSR		APR	
1990 3240		20543	USSR		APR	
1990 024E		20544	USSR			
1950 024F		20545	USSR USSR		APR	
1990 0246		2054B	USSR	22 MAR	APR	
1990 0258		20534	SO		APR	
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		20538	USSR		APR.	
	OFEO 2	20540	ISRAEL		1	
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1990 032A	FOTON 3	20566	USSR	_	ADR	
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1990 LAUNCHES	HES (CONT.)	-		1195-		
1990 0408		50	-	28	¥¥	
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1990 044C		23617	USSR	MAY	16 MAY	
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20711 USSR 20 0 UL 6 MIC 20 MI	20711 01559 220 01L 0 10L 0 10							
2070 0 USSR 25 JUL 4 AUG 2071	20775 0 1058	0.62F	20	730	USSR		₽ ne	
20773 0.0554 25 0.01	20771 0.0584 25 0.0L 4.0L 2.0777 0.0584 25 0.0L 4.0L 2.0777 0.0584 25 0.0L 4.0L 2.0772 0.0584 25 0.0L 2.0584 25 0.0L 2.0772 0.0584 25 0.0L 2.0584 25 0.	.62G	5.3	731	USSR	JU. :	₽ne	
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A MANNED SPACECRAFT SUCCESSFULLY ORBITED THE MOON AND WAS RECOVERED.

FOOTNUTES FOR DECAYED OBJECTS

SUCCESSFUL RE-ENTRY AND RECOVERY.

ANNOUNCED LUNAR IMPACT.

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1965 9208 AND 1965 020C. THE OBJECTS OF THIS SERIES THAT REMAIN IN ORBIT
CAN BE FOUND IN THE LIST OF OBJECTS IN ORBIT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEBRIS DISCOVERED IN DABIT WHICH HAS NOT BEEN IDENTIFIED WITH ANY LAUNCH-
                                                                                                                                                                                                                                                                                                                                                                                                                                                  150 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1965 020A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            82 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1966 056A. THE OBJECTS OF THIS SERIES THAT REMAIN IN ORBIT CAN BE FOUND IN THE LIST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                THE OBJECTS OF THIS SERIES THAT REMAIN IN ORBIT CAN BE FOUND IN THE LIST
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                                                                                                                                                                                                                                                                                                                                                                         168 DBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1965 012A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1965 1124.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     40 OBJECTS HAVE BEEN TOENTIFIED AS HAVING BEEN LAUNCHED WITH 1966 012A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    35 OBJECTS MAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1966 0594.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   53 08JECTS HAVE BEEN IDENTIFIED AS HAVING BFEN LAUNCHED WITH 1966 0884.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   41 08JECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1966 101A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AS HAVING BEEN LAUNCHED WITH 1967 001A.
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                                                                                                                                                                                                                                                                                         98 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1964 070A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1965 0884.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             54 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1966 0464.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AS HAVING BEEN LAUNCHED WITH 1966 1044.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1968 1174.
                                                                                      ANNOUNCED SUCCESSFUL RE-ENTRY AND RECOVERY OF MANNED SPACE VEHICLE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED 1967 011A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1966 0128 AND 1966 012C. ALL UBJECTS OF THIS SERIES HAVE DECAYED.
                                                                                                                                                                                                          24 UBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH
                                                                                                                             SUCCESSFULLY ORBITED AND RECOVERED A MANNED SPACE VEHICLE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OF A MANNED SPACE VEHICLE.
                                                                                                                                                                                                                                              1962 8-10TA 1. ALL OBJECTS OF THIS SERIES HAVE DECAYED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ANNOUNCED THAT SPACECRAFT LANDED ON THE MOON.
ANNOUNCED SUCCESSFUL RE-ENTRY AND RECOVERY.
                                                                                                                                                                                                                                                                                                                                                                                                                 ALL UBJECTS OF THIS SERIES HAVE DECAYED.
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                                                 SUCCESSFUL RE-ENTRY BUT NOT RECOVERY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15 DBJECTS HAVE BEEN IDENTIFIED
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                                                                                                                                                                  LUNAR IMPACT.
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FOOTNOTES (CONT)

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- 23 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1969 021A. THE OBJECTS OF THIS SERIES THAT REMAIN IN ORBIT CAN 3E FOUND IN THE LIST OF OBJECTS IN ORBIT.
- A MANNED SPACECRAFT WHICH SUCCESSFULLY ORBITED THE MODN. LANDED MAN ON THE MOON IN THE LUNAR MODULE. AND WAS RECOVERED. **⇔∩**∀
- THE OBJECTS OF THIS SERIES THAT REMAIN IN ORBIT CAN BE FOUND IN THE LIST 38 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1969 0294. OF OBJECTS IN DRBIT. ۸×
- THE OBJECTS OF THIS SERIES THAT REMAIN IN ORBIT CAN BE FOUND IN THE LIST 27 38JECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1969 064A. ۸۲
 - A MANNED SPACECRAFT WHICH PASSED AROUND THE MODN AND WAS SUCCESSFULLY A: MANNED SPACECRAFT WHICH SUCCESSFULLY LANDED ON THE MOON. RETURNED TO SELENOCENTRIC ORBIT. THEN DECAYED ON THE SURFACE OF THE MOON. DBJECTS IN GRBIT. H

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- ANNOUNCED THAT SPACECRAFT LANDED ON THE MOON. RETURNED TO EARTH. AND WAS SUCCESSFULLY RECOVERED. RECOVERED ON THE EARTH. ΑP
 - DEBRIS DISCOVERED IN ORBIT WHICH HAS NOT BEEN IDENTIFIED WITH ANY LACNCH. ₩ 0 ¥
- 5 UBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1971 0744. OBJECTS OF THIS SERIES HAVE DECAYED. ANNOUNCED DECAY ON MARS. ALL \$ O V A R
- 29 OBJECTS MAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1971 1064. ALL OBJECTS OF THIS SERIES HAVE DECAYED. ATA
 - OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1973 021A. 20 08JECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1973 0174. ALL OBJECTS OF THIS SERIES HAVE DECAYED. 197 ∜O ¥ **∜∧∀**
- AS HAVING BEEN LAUNCHED WITH 1973 0274. OBJECTS OF THIS SERIES HAVE DECAYED. ALL DBJECTIS OF THIS SERIES HAVE DECAYED. 24 08JECTS HAVE BEEN IDENTIFIED ALL ∯ 3 €
- I'M OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1973 0754. AS HAVING BEEN LAUNCHED WITH 1974 ALL DBJECTS OF THIS SERIES HAVE DECAYED. 20 CBJECTS HAVE BEEN IDENTIFIED A Y⇔

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- AS HAVING BEEN LAUNCHED WITH 1974 1034. DECAYED. OBJECTS OF THIS SERIES HAVE SI OBJECTS HAVE BEEN IDENTIFIED ALL %Z ¥
 - 19 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1974 1044. 199 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1975 0444. ALL UBJECTS OF THIS SEATES HAVE DECAYED. ALL DBJECTS OF THIS SERIES HAVE DECAYED. 9 Α⇔ 0 8 8 8 8 8 8 8 8
- 1975 0664, CARRYING U.S. APOLLO ASTRONAUTS, AND 1975 0654; CARRYING USSR SOYUZ COSMONAUTS, DOCKED, CREW MEMBERS VISITED EACH OTHER* SPACECRAFT. ALL OBJECTS OF THIS SERIES HAVE DECAYED. # 000
 - AND WERE SUCCESSFULLY RECOVERED. LANDED ON MARS. ₩O₩ Ѐ⊹
- 77 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1975 080A. AS HAVING BEEN LAUNCHED WITH 1975 1024. DBJECTS OF THIS SERIES HAVE DECAYED. 63 OBJECTS HAVE BEEN IDENTIFIED **%** 40

ALL OBJECTS OF THIS SERIES HAVE DECAYED.

- AS HAVING BEEN LAUNCHED WITH 1976 012A. AS HAVING BEEN LAUNCHED WITH 1976 037A. DE CAYED. 17 UBJECTS HAVE BEEN IDENTIFIED ALL OBJECTS OF THIS SERIES HAVE 25 OBJECTS HAVE BEEN IDENTIFIED # 5 0 # T T
- 41 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 0634. ALL DBJECTS OF THIS SERIES HAVE DECAYED. OBJECTS OF THIS SERIES HAVE DECAYED ა ე

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